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No. 32



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RAILROAD

PROCUREMENT MINISTRY'S MEASURES FOR IMPROVING GRAIN TRANSPORT

Moscow ZAKUPKI SEL'SKOKHOZYAYSTVENNYKH PRODUKTOV in Russian No 9, 1980 pp 31-33

[Article by Yu. Melikhov, transport administration chief, USSR Ministry of Procurement: "To Avoid Rail Car Idle Time"]

[Excerpt] During the past four years, enterprises of the USSR Ministry of Procurement system have done a great deal of work on mechanizing rail car loading and unloading. Mechanized warehouses and elevators and receiving centers for grain freighters have been built and new unloading machinery has been introduced. Steps taken to develop the transport system and improve the equipment and freight fronts at enterprises enabled us to reduce car idle time by 18 minutes in 1979 as compared with 1978, and by 36 minutes during the first six months of this year.

In May of 1978, the CPSU Central Committee adopted a decree "On the Organizational Work of the Chelyabinskaya Obkom on Reducing Rail Car Idle Time During Freight Operations and Ensuring Their Protection at Oblast Industrial and Rail Enterprises." The union republic ministries of procurement and grain-products administrations are introducing the work experience of Chelyabinskaya Oblast and the South Urals Railroad on reducing idle time during freight operations at their enterprises.

Enterprises of Orenburg, Altay, Omsk, Kiev, Grodno, Kustanay, Semipalatinsk and a number of other grain-products administrations have developed with railroad divisions measures based on the Chelyabinsk method and have assumed joint socialist obligations on further reducing car idle time. Forty-seven enterprises are currently using the Chelyabinsk method.

Mastering high-volume shipments of grain, flour, groats and mixed feeds in 1980 and subsequent years will require improvement in freight work and in the art of planning and managing shipments in every way possible. It is important to draw lessons from the mistakes and oversights of the past, when effective steps were not taken in some places to accelerate grain unloading, make better use of the cars supplied, regulate loading by destination, as a result of which many enterprises and grain-products administrations failed to meet the loading plan.

But why did the measures carried out to mechanize grain loading and unloading fail to yield appreciable improvement in rolling stock use? There are two main reasons. Impressive as they are, they are not the only ones.

The first is unevenness in the arrival of freight at grain-processing enterprises and centers. The throughput capacity of elevators and other grain-processing complexes

is considerable, but not unlimited, and their productivity is largely determined by the evenness with which they operate through the day. Cars chaotically delivered to a customer stand idle in the stations waiting for free work fronts and grain-handling equipment. Other times, loading and unloading equipment stands idle waiting for the next freight to come in. All this causes arrhythmia in the use of labor resources, machinery and equipment.

Freight arrives irregularly due first of all to uneven shipments out from local areas during the course of the month or quarter and due to the uneven supply of cars to railroad stations from remote regions of the country, which leads to their uneven arrival during the course of the day.

The second cause of excess car idle time lies exclusively with us. The implementation of measures to mechanize car unloading must be completed, freight operations must be comprehensively mechanized in all production sectors, siding work technology must be improved, and the responsibility of enterprise transport shops for promptly handling the cars must be increased.

We have been complaining for several years now about the fact that the existing car loading and unloading time norms generally do not have thorough technical and economic substantiation and are extremely overstated, and thus not realistic, but that cannot be proven or supported by calculations. Therefore, we have thus far not proven the substantiation for introducing a different norm and must consider the ones in effect law and take steps to carry them out.

One of the most critical and top-priority tasks is to accelerate the mechanization of loading and unloading work, to reduce the proportion of manual labor. The USSR Ministry of Procurement Order No 354 (1976) "On Steps to Improve Comprehensive Mechanization in Rail Car Loading and Unloading, which gives an important role to improving and introducing comprehensive mechanization which anticipated the full or partial replacement of manual labor in loading and unloading work has been and remains the program document for the five-year plan for our enterprises.

As is known, in February of this year, the Ministry collegium adopted a resolution which outlined a concrete program for creating and introducing modern loading and unloading equipment, as well as ways of developing promising machinery and vehicle designs and freight operation comprehensive mechanization systems. In the long term, we plan to do scientific research and experimental design work in the area of developing unloading equipment, foremost for packaged freight. We anticipate increasing the productivity of machinery, increasing technical reliability and durability by further improving designs and by reducing expenditures on maintenance and repairs.

The introduction of packetized and containerized shipments is an effective means of increasing labor productivity and mechanization in loading and unloading work with packaged freight. In order to mechanize the loading of such freight, we are completing the development and planning the introduction of effective packet-forming machinery designs, foremost for packetizing sacks with flour and mixed feed. The technological process of forming transport packets anticipates progressive labor methods, the comprehensive use of technical means, and the most modern forms of setting up car loading.

Precise loading planning is the basis of the shipping process and an important condition for a steady supply of grain products. In recent years, the USSR Ministry of

Procurement, using economic-mathematical methods and computers, has solved a number of problems on improving shipment management. The recommendations made by the computers contain an optimum shipment plan by zone of the country and with consideration of the situation which has evolved with regard to grain quality resources and flour varieties and as a function of the production capacities of the grain-processing enterprises. The experience accumulated testifies to the necessity of further deepening and developing this work.

Primary attention must be focused on organizing and processing plan applications. Unfortunately, individual ministries and grain-products administrations are permitting late submission of applications and expanded freight shipment plans. As a result, there is delay in communicating plans to executors and the roads and shippers are not fully ready to carry out the plan on the first of each month.

In the winter of 1980, when shipment plans were met at the 50-percent level by a number of grain-products administrations, grain shippers and recipients became convinced that shipment in unit trains was very effective. The most progressive form of loading organization is considered to be shipper-organized unit trains. The unit-train system is a complex of technological measures interlinking into a unified technological process the work of suppliers, railroaders and grain consumers. The ideal form anticipated shipping grain from one loading point to one unloading point.

Closed, peripheral unit trains have enabled us to eliminate from circulation the time cars spend at loading points. As a result of shipments using this method, deliveries have been speeded up and the amount of grain shipped has been increased somewhat. Unit trains bound for destinations from whence the cars are sent in groups to various consignees are less efficient because the cars in the unit trains take two to three days to be unloaded at their destinations. With this method of delivering grain, every potential opportunity for reducing car unloading time must be used and where there are few such opportunities, they must be increased.

Careful use of the technical norms for loading cars is of decisive importance in using car load capacity correctly. Calculations show that increasing static load by 0.3 tons is equivalent to increasing average daily loading by more than 70 cars.

Saturating the fleet with grain cars and reducing car undercarriage volume by 90 cubic meters have enabled us to significantly increase static loads in grain shipping in recent years. Thus, over the past five years, it has been increased by 2.45 tons per car, and for mixed feeds -- by 1.5 tons.

It should be noted that work on increasing car load capacity in tons and in cubic meters is more active in a number of grain-products administrations but lags in some others. Monitoring reweighings we made of loaded cars showed that up to 25 percent of the cars checked were underloaded by one to 2.5 tons per car as compared with the established technical norms. In this regard, in a majority of cases the underloading was not reflected in the shipping documents, where the weight of the freight is generally indicated by the shipper in accord with the technical norm for car loading.

The materials from monitoring reweighings are sent to the appropriate enterprises, grain-products administrations and union republic procurement ministries, but the steps they have taken to meet the established load norms have thus far been inadequate. Demandingness of enterprises must be increased significantly.

In order to ensure that freight is protected, in accordance with a USSR Ministry of Procurement collegium resolution of 2 February 1980, the administrations are faced with systematically analyzing the status of freight protection at all enterprises and, on that basis, with working out measures aimed at eliminating the causes of freight loss, spoilage and damage. Attention has been focused on the necessity of strictly observing the Railroad Regulations and Freight Shipment Regulations when receiving and shipping freight, recording instances of failure to protect shipments, and drawing up commercial documents. Also anticipated were systematic checks of car preparation quality before cars are loaded, as well as the taking of effective steps to prevent losses of grain products caused by loading in defective cars or failure to follow grain loading procedures, as well as by loading cars in excess of the established norms.

At the same time, it was suggested that enterprise leaders be more exacting of rail station workers in following Article 46 of the Railroad Regulations, under which cars must be suitably prepared to ship grain. A number of measures are aimed at improving the organization of freight shipments routed through river or sea ports, in which regard particular attention was focused on strict observance of plan discipline and intensified supervision of shipper conformity to the requirements of freight packing, packaging and labeling specifications and standards.

Smoothness and mutual assistance in the work of enterprise siding collectives and railroad workers are especially important now, when we are faced with exceptionally responsible tasks in the intensified, uninterrupted shipment of grain from elevators, in delivering grain at the proper time so industrial enterprises can operate normally. Unfortunately, there are still quite a few enterprises which have not set up close cooperation with railroad stations, which have not introduced progressive technology for servicing sidings so as to ensure the prompt supplying and removal of cars, the organization of precise information on the approach and arrival of freight, improvement in operational planning for station and enterprise operation, the expanded cooperative use of equipment and the introduction of leading work methods.

As is known, interrelationships between enterprise and station are built on a contractual basis. Successful work requires a careful check of the condition of sidings. This should be done both where planned indicators have not been achieved and where high indicators conceal shortcomings and lag in individual sectors.

New contracts and agreements must anticipate increasing shipment of freight in unit trains, higher static loads, even submission of freight for shipment and leading methods of processing rolling stock. It is absolutely necessary that the contract reflect the correct economic and legal aspects of interrelationships between enterprise and railroad, that it anticipate a precise delimitation of the duties and responsibilities of the parties, and that it stimulate improvement in all enterprise work, especially at junctions where the siding and the station interact.

Enterprises are currently doing a great deal of important work on transferring to the railroads sidings with no technological shipments. All preparatory work must be completed as quickly as possible: we must determine the amounts of repair and renovation work, establish procedures for servicing enterprises which have transferred their sidings to the railroads, and agree on procedures and schedules for those transfers.

Sidings being transferred must be in condition to allow the transit of cars at the established speeds and ensuring complete traffic safety, which is the most important condition for unimpeded acceptance of sidings by the railroads. The transfer of sidings is associated with painstaking calculations and technological work and demands of both railroad workers and grain-products enterprise workers mutual understanding and smooth, precise work without any red tape or rivalry.

In order to help enterprises with methods, the Khar'kov, Gor'kiy and Kustanay machine-testing stations have created laboratories to work out unified technological processes for the operation of sidings and contiguous railroad stations; they have tested new machinery and equipment intended for mechanizing loading and unloading work. In the future, the laboratories will help substantiate norms for car turnaround on sidings and will help prepare the necessary materials and calculations for precontractual discussions between enterprises and the railroad.

The collegium of the USSR Ministry of Procurement and the presidium of the central committee of the agricultural workers trade union, in support of the initiative of leading collectives of the Leningrad Transport Center and enterprises of Chelyabinskaya Oblast in the competition for the efficient use of means of transport, have resolved to hold a 1980 all-union contest-inspection among enterprises and organizations of the USSR Ministry of Procurement system which have railroad sidings for the best use of rail cars, reducing idle time during freight operations, mechanizing loading and unloading work, and ensuring the protection of freight and rolling stock.

The winning collectives in the contest-inspection will be awarded first, second and third place, each place being awarded an Honorary Certificate of the USSR Ministry of Procurement and agricultural workers trade union central committee and an appropriate monetary prize. We have approved the terms of the contest and the composition of the commission to sum up the results of the all-union contest-inspection. These terms have been published in issue No 8 of the magazine this year.

In order to improve shipment quality and the effectiveness with which shipping equipment is used in the 11th Five-Year Plan, sidings will continue to be developed and their renovation will be accelerated. Based on technical and scientific progress, we anticipate eliminating the lag in the availability of equipment to transport shops relative to basic production, an increase in the proportion of shipments of grain and flour packed in containers and transport packets in special cars, a reduction in the labor-intensiveness of loading and unloading work, and a reduction in the time cars spend in freight operations.

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RAILROAD

SHORTAGE OF BUILDING MATERIALS FOR BAM NOTED

Moscow KOMSOMOL'SKAYA PRAVDA in Russian 16 Oct 80 p 2

[Article commissioned by the labor collectives of A. Bondar', V. Stepanishchev and V. Fedorets, leaders of Komsomol Youth brigades and Leninist Komsomol Prize winners; and V. Krasnova, plasterer-painter and deputy of the RSFSR Supreme Soviet: "How Will You Help the Construction Project?"]

[Excerpts] The letter of the Baykal-Amur Mainline's builders names enterprises that disrupt deliveries for the shock-work project. We expect from the Komsomol committees and "spot-lighters" quick action and reports to the editorial office about what specifically has been done by BAM [Baykal-Amur Mainline] sponsors and suppliers.

We found ourselves today in a very difficult situation. Fulfillment of the commitments on laying track to Ust'-Nyukzha is threatened. What is the matter? Our partners have let us down seriously. We shall begin with the crossties. Four tie-impregnating plants—the Tomsk, Tayshet, Zhanasemey and Ushumun plants—supply them. Not one of the plants carried out the plan for deliveries for three quarters. Thus, the Zhanasemey plant fell short by more than half of the number planned. The Tomsk plant shipped...only a 20th of it. In all, deliveries to us fell short by about 300,000 crossties. If these plants do not eliminate the arrears promptly, we will not lay the track to Ust'-Nyukzha.

Builders of the BAM's Central Section committed themselves to opening up passenger traffic from Tynda to the Chil'chi Railroad Yard by 23 February 1981. Also ahead of time. But until now temporary spans have been thrown over many of the bridges. Why? The cause is the same—spans have not been received from the metal-structure plants. The Voronezh plant has carried out only 64 percent of the plan, the Ulan-Ude plant half of the plan, and the Chekhov plant—in Moscow's suburbs—only 13 percent of the plan.

The delivery of earthmoving equipment also worries us seriously today. Excavators from Voronezh have proved themselves well on the BAM. But deliveries have fallen short by nine machines. And this means 1½ million cubic meters of soil not filled.

The BAM is not just a railroad track. Tens of railroad yards are being built along the route. And there is a shortage of brick. This year deliveries fell short by 10 million bricks. Chitinskaya Oblast by 2½ million, Buryatia by about 2 million, and Irkutskaya Oblast by more than 7 million.

We adopted our commitments to take into account the funds planned for raw and other materials. But these plans have not been carried out. Who should monitor deliveries for the BAM? Primarily the responsible workers of ministries and agencies. They know about our difficult situation. But something else is no less important: monitoring orders for the BAM must be done on a large scale. For our construction project is a nationwide one.

We appeal to the Komsomol organizations of the cities, krays and oblasts where the plants named are located. Friends, it is your duty to monitor orders for the BAM. How will you help the BAM? What have you done for most rapid fulfillment of the construction project's orders? Indeed, this is also your mainline. It is today testing the attentiveness to business, the self-discipline and the initiative of many.

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CSC: 1829

GEOLOGIST LISTS RESOURCES WHICH BAM WILL HELP EXPLOIT

Moscow SOVETSKAYA ROSSIYA in Russian 29 Oct 80 p 2

[Interview with V. V. Onikhimovskiy, hero of socialist labor, Lenin prize winner and doctor of geological and mineralogical sciences, by V. Razboynikov: "The BAM Opens up Horizons"]

[Text] This man has devoted half a century to geology. Many discoveries and the development of useful minerals in the Far East, particularly unique tin-ore fields, are associated with his name. V. V. Onikhimovskiy is a member of the Scientific Council on Problems of the Baykal-Amur Mainline and of the council on the coordination of scientific research, theses and geological and geophysical operations for this region.

[Question] Vadim Viktorovich, the problem of the BAM in its modern concept embraces a large number of tasks that are joined together by a common idea—the creation in the near North of a new zone of economic development. What kind of mineral and raw-material resources does this zone have, and what are the prospects for developing them?

[Answer] The BAM route intersects a number of the largest geological regions, each of which is marked by a singular complex of minerals. In order to demonstrate this more graphically, let us take a trip mentally from Tayshet to Sovetskaya Gavan'—the terminal point of the BAM.

At the westernmost section of the route is the Angara-Ilin iron-ore province, with numerous fields of high-quality iron ores. In the Upper Lena region a number of oil and gas fields are found. Close to the Davan tunnel an extremely valuable raw material—granular quartz—has been observed. More to the north a unique mineral is found which can, on the whole, yield both potash fertilizer and alumina—the raw material for making aluminum. The name of this mineral is sannyrte, and nature has put together whole mountains from this rock. Next the Kholodnenskoye lead-and-zinc field should be noted, which is north of the route. The target there is, in general, ready, and a road must be built to there without delay. Nor must the Molodezhnoye field of chrysotile asbestos be bypassed. South of the route is the Orekitkanskye field of molybdenum ores.

In continuing this review, it is necessary to dwell on South Yakutia. The land is unique in its natural riches. Certainly, it is pertinent to recall the legend about how God, having created the earth, flew above it. In so doing, he held in his palms incalculable riches. Above Yakutia the hands of the Most High froze, and the treasures spilled. A legend is a legend, but here is a scientific fact: almost all the elements of Mendeleyev's periodic table have been found in places

here. According to preliminary calculations, coal reserves alone consist of more than 40 billion tons. And the iron ore field here is of a unique type.

To the southwest, enormous reserves of copper ore are found in Udokan. And one cannot help but note an astonishing rock that is found in the Chara valley, which has been given the name charoite. This mineral, of unique color--from greenish to lilac--can be used, for example, for artistic articles. This deposit is the only known one in the world. Still farther to the east are found deposits of tin, tungsten and other valuable metals. Many of them are extracted from one composite raw material.

I still have not told about the rich forestry resources, which in this region are extremely promising. One can recall also the most easterly coal fields--not far from Komsomol'sk on the Amur.

In brief, much can be said about the riches of the zone, and there are no few riches stored in almost every oblast and autonomous republic. There are both marble and polymetallic ores here....Some of these useful minerals were observed many years ago. But it did not seem possible to use them. With the introduction of the Baykal-Amur Mainline, the situation will be changed.

[Question] The problems of the economic conquest of this zone, as is known, are extremely complicated, by virtue of both the climatic conditions and the sparsity of population of these places. And many branches of the economy are needed right away here to get down to business. It is true, we do have some experience in releasing the natural resources of large, sparsely inhabited regions into national economic circulation. To what extent can we use that experience in this case?

[Answer] It is impossible, of course, to compare this program of development with other programs. For there are peculiarities here. When we developed, let's say, the West Siberian lowland, the main task was the exploration, recovery and transport of petroleum. Here the program is multifaceted and is of a multipurpose nature. The fact is the work will be done under more complicated climatic conditions and present new demands on equipment, technology and working conditions. The natural resources are different, so an integrated multiple-industry approach to their use is required.

Unfortunately, in mastering development of the BAM zone, parochial tendencies have made themselves known from the very start. In the east, let's say, a complicated raw material--alunites--is found, but the Ministry of Chemical Industry, for example, is interested in obtaining only sulfuric acid anhydride. The Ministry of Agriculture is interested in the possibility of producing potash fertilizer. The Ministry of Nonferrous Metallurgy says, "Give me alumina." In such cases, losses in integrated mastery of the natural deposits are inevitable. The inadequacies of the parochial approach are already being observed in logging. Many ministries and agencies are logging. There is no coordinated plan for felling, nor is there a unified technology. Each does what comes to mind. The consequences are not difficult to imagine: indeed, in many places it is difficult to restore forest tracts, if it can be done at all.

In speaking of the use of forest resources (incidentally, this industry pays for itself most quickly of all), it is appropriate to cite this figure. Right

now about 15 million m³ have been taken. Using an appropriate organization of the technology, this can be quadrupled without harm to forest reserves.

Also disquieting is the circumstance that there are no design and budget-estimating at all for many facilities. It happens that nonobjective data are incorporated when making it up. And then the cost of construction and of the enterprises' output go up. For example, the Neryungri coal field, the expenditures for which have become severalfold higher than anticipated. This has had an influence also on the cost of the coal.

In order to make more effective use of natural resources within the BAM zone, it is proposed to create regional production complexes. They will permit many complicated problems to be solved at least expense. A lack of coordination of actions here is intolerable.

[Question] If you have spent time at these places, you will be convinced that great attention has been concentrated on the construction of the route itself. As for economic development, then, except at Neryungri, little work is being promoted anywhere. What is being done in this area, who is coordinating the activity of the industries, who will be the newcomers to this district, and who will determine the prospects and sequence of construction and the realization of tasks?

[Answer] It is proposed to open up the whole route to through traffic during the Eleventh Five-Year Plan. The efforts of all participants in erecting the mainline have been subordinated to this. Their headquarters is at the construction project. The main administration's supervisors have completely realistic action programs. They show the dates of turnover of the various segments and the production and housing buildings, and a strict sequence of operations has been defined. But a regional organ that would coordinate this development does not exist here. We have many recommendations--good and diverse. An integrated program for development of the BAM zone must be worked out as quickly as possible--such a task was set in the CPSU Central Committee and USSR Council of Ministers decree about the improvement of planning. It was the methods of solving this task that were discussed at the conference dedicated to questions of developing Siberia and the Far East that was held recently in Novosibirsk. Many scientists and party and economic workers agreed on one thing: in order to coordinate all the work a special organ with appropriate authority is necessary. Unfortunately, an ever-deepening gap is being created between construction of the mainline and the development of the zone adjacent to it.

This gap will soon make itself felt. The rails are extending ever farther to the east, tunnels are being driven, and bridges are being erected. But there are no transport lines to the places where minerals are to be dug--neither highways nor railroads. There is no more convenient time than right now to build them, when personnel have the required machinery at hand. Later, everything will have to be brought back here. Only it will be necessary to bear additional expense, which will not be small. It is necessary to get ready to develop the resources without delay. The BAM should operate at the full power of its potential.

There was talk recently about starting exploitation of the Udokan copper field--our country's largest. But there are difficulties here, both natural and organizational. The geologists have told USSR Ministry of Nonferrous Metallurgy: here is a facility for you--take it and operate it. But far from it, the ministry has

dragged out the design and industrial preparation for developing the deposit. And in this case, it is pertinent to recall, as never before: time is money.

The problem of starting up the Udokan copper field has occupied a leading place among the BAM's first-priority problems.

[Question] The Far East is at present a major consumer of ferrous metal. Shortages thereof are hampering the development of the productive forces. This means that the question arises of creating a metallurgical base in this zone. Where is it most convenient to site it?

[Answer] Each year several millions of tons of rolled steel and other ferrous-metallurgy products are delivered from the Kuzbass [Kuznetsk Coal Basin] and the Urals to cover the needs of the Far East's industry. The question of reducing transportation costs arises here. Thus, the establishment of metallurgical enterprises is dictated by severe necessity. All factors must be considered here: distances from the railroad, the local terrain, weather and climatic conditions, and so on. In Neryungri, for example, coking-coal reserves have been found. Fields of iron ore have been observed not far away. It would seem that everything is at hand, and so you begin to build a complex. But there are many factors that complicate its establishment: technological and natural, especially those connected with seismicity, prevention of the effects of which will make the products of this enterprise much more expensive. Something else also must be taken into consideration: the soils and the climate of this region will not permit creation of the required foodstuffs base for such a large number of people. Again, everything will have to be brought in....

Each option for the construction of an enterprise in Amurskaya Oblast, in the region of the town of Svobodnyy, also has its pros and cons. It is necessary only, in evaluating the various options, to proceed not from parochial or from local-prestige considerations but to be guided by nationwide interests.

[Question] The question about establishing an energy base in the BAM zone also is extremely important. There are fuel and water resources for this here. What are the prospects for solving this problem?

[Answer] A unified power-engineering program is needed to develop the natural wealth. This should be worked out by not only the Ministry of Power and Electrification but also by the other agencies that are to operate in this region. And again, the question arises of a single coordinating center that is granted broad powers, which would be able to decide, let's say, which fields of steam coal should be brought into production as first priority.

Today, on the threshold of the Eleventh Five-Year Plan, it is necessary to consider all these questions in detail in order to begin to solve them while the track is being laid. People who have come to build the mainline can find jobs here also in the future; an outflow of personnel is extremely undesirable. Our economy has achieved an unheard of upsurge. The long-range outlook is here today. A Ministry of Construction in Regions of the Far East and the Transbaykal has already been created. Therefore, a reliable beachhead for a further onslaught will be established here during the Eleventh Five-Year Plan.

RAILROAD

BAM CONSTRUCTION WORKERS ENCOUNTER SUPPLY PROBLEMS

Moscow GUDOK in Russian 6 Dec 80 p 2

[Article: "BAM: Suppliers, Pull Yourselves Together!"7]

[Text7 GUDOK has provided several articles on how the builders of the eastern section of the BAM are struggling to put projects into operation ahead of schedule. In particular, the newspaper has brought attention to the work of the sponsored construction organizations, which have been given the job of building housing settlements.

The envoys of the Ukraine (the settlement of Urgal), Moldavia (Alonka), Novosibirsk (Berezovka) and several others are working diligently. Everything says that these sponsored construction organizations will complete the necessary work on schedule and with high quality.

At the same time there is concern about the serious lag behind schedule of the builders from Tambov, Altay Kray and Volgograd Oblast.

This article tells about the problems being encountered by the collective of Volgogradbamstroy [Volgograd BAM Construction Trust7, which is building the settlement of Dshanku.

The natives of the Volga area have greeted their third winter in the taiga. They have already completed all of the temporary construction projects for cultural, domestic and industrial use, with the exception of the kindergarten. But the construction of the permanent settlement, planned for completion in 1982, is cause for alarm. It is true, that the collective has started work on the boiler plant, water supply and purification facilities, schools, kindergartens and nurseries, the medical and obstetrics center, the engineering system, four 12-unit apartment buildings and eight duplexes. But, unfortunately, the assignment for the year will most likely not be fulfilled. What is the problem?

The Ministry of Transport Construction is not doing a good job of supplying the Volgograd workers with construction materials; there is not even enough sand and crushed rock. There are not enough lifting

machines, tower and tracked cranes and excavators for working the earth in the quarries.

GUDOK's correspondent, S. Kasatyy, asked the secretary of the Volgograd Oblast Party Committee, S. Ye. Krylov, to describe the measures being taken by the Oblast Party Committee to remedy the problems at the construction site.

"The situation is very serious. Due to the lack of materials, for example, the form for the purification facilities has not been filled with concrete from May through September. Work on the sewage system was disrupted because they did not receive the concrete heater; and the Zhelezobeton /reinforced concrete/ Association did not deliver the needed troughs on time.

"By the way, the settlement of Dzhamku is experiencing the same problems that the oblast is experiencing. We received only one third of the rolled metal that were supposed to have received. What we did get did not come in the first and second quarters, as planned, but in the third and fourth quarters of the year. This is why we delayed in sending it on to the BAM construction workers. The Ministry of Transport Construction was to have sent construction equipment to Dzhamku in the third quarter of last year. Alas, they did not manage to accomplish this in 1980 either. We were forced to send a tower and tracked crane to the Primorskiy taiga from Volgograd, a distance of thousands of kilometers. The Ministry of Transport Construction studied the matter of sending an excavator to Dzhamku for working the earth under water. The ministry did not reach a decision. An hydraulic excavator is needed badly; the outcome of the 1981 plan depends upon it.

"For nearly six months the Dal'giprotrans /Far Eastern Transportation Planning/ Institute in Khabarovsk has delayed issuing the estimating documentation for the housing and cultural and general services facilities. Our institute, Volgogradgrazhdanproyekt /Volgograd Civil Construction Planning Institute/, has no limits on planning.

"We receive a lot of complaints from our envoys about the late deliveries of posts from Komsomol'sk-na-Amure. This frequently idles our workers. From the Volga area we ship insulated panels for the construction of prefabricated small buildings. Now they are demanding that we supply them with boards for flooring and woodworking.

"We have shipped a half million bricks to the construction project, while the general contractor has supplied only 70,000; we have shipped more than 200 cubic meters of claydite and provided funds for cement. We would have shipped basic reinforced concrete structures, but the railroad refused to transport them, arguing reasonably that brick and claydite cost as much to ship as gold. This is true.

"Volgograd Oblast does not have a lot of timber. We receive lumber from Krasnoyarskiy Kray and Irkutsk Oblast and process it ourselves. But it is comical to ship raw timber from Siberia and then ship the finished lumber back again. It is not economically sound and it is

wasteful. We believe that it is entirely possible and necessary to manufacture such materials at enterprises in the Far East.

"The Volgograd Oblast Party Committee has not forgotten Dzhanku. No matter how difficult things are in the oblast, we have helped our envoys with metal and brick, linoleum and tile. We have obligated the institute Volgogradgrazhdanproyekt to speed up the planning work. Workers from the Party committee have visited Dzhanku several times and have taken an interest in the needs and demands of the builders. We are trying to solve all of these problems expeditiously and in a business-like manner.

"The measures that the Party committee has taken will make it possible for the builders to fulfill 80 percent of their assignment for this year; in 1981 we will speed up all work without exception. The settlement of Dzhanku will be put into operation right on schedule."

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CSO: 1829

RAILROAD

RAILROADS CRITICIZED FOR DELAYS IN TRANSPORTING FUEL

Moscow GUDOK in Russian 20 Nov 80 p 1

/Article: "The Situation Demands Smoother Operation"7

/Text7 There is presently an alarming situation on the major coal-loading railroad lines. Many railroads are fulfilling their plans for fuel shipments, but they are unable to handle the increased assignment. Those that serve the main coal basins are the ones having the biggest problems.

The railroad workers often complain that the shippers are not presenting the cargo. For example, here is the picture on the Kemerovo railroad. The Kuznetsk Basin miners sometimes do not deliver coal for shipping. But as soon as the miners start producing smoothly - and the railroad workers readily admit this - there is a shortage of railroad cars. Meanwhile on the Kemerovo railroad the supply of gondola cars corresponds to the norm; there is even a 2,700 car supply. The problem is that the railroad did not take the time to rationally organize the use of its rolling stock and to establish a timely unloading of cars. As a result, the turnover of railroad cars was slowed by .1 days.

A similar situation exists on the Tselinnaya railroad, where the rail-car turnover has been slowed by .06 days as opposed to the norm. On the South-Eastern Railroad all disruptions in coal shipping are being caused by a lack of empties. On this railroad the turnover has been slowed by .47 days.

It has long been a stubborn tradition among the managers of some coal shipping railroads to place the blame on difficulties common to all, to point their fingers at their neighbors and to complain about the collectives which regulate the railroads. But experience shows that in these present, truly complicated conditions, those who skillfully make use of gondola cars are able to handle their assignment. Among those railroads who have managed to fulfill their technical plan for coal shipping are the Moscow, L'vov, Alma-Ata, Sverdlovsk, Southern Ural, East Siberian and several others. What is more, even at some

stations whose workers are aware of their responsibility for the shipping of this crucial commodity, the work is proceeding well, even though things are not what they should be on the railroads overall.

There is absolutely no excuse for the disruptions in organizing the loading of petroleum products; in the majority of cases it is the railroad workers who are responsible for this. The lack of empty tank cars has led to a lull at the tank stations of the Azerbaijan, Kuybyshev and Western Siberian and other railroads. At the same time there are railroads which have managed to organize an uninterrupted loading of petroleum products and where the assignment for shipping liquid fuel is being fulfilled and overfulfilled. The Belorussian railroad is a good example of this. Every twenty-four hours they load about the same amount as on the Kuybyshev Railroad, but the work is proceeding considerably more smoothly.

Naturally, the organization for fuel shipments cannot be separated from the organization of the operations altogether. Great harm is done to the delivery of fuel by the misunderstandings on the inter-railroad joints, similar to those described in the letter from the Station imeni Taras Shevchenko. All of the efforts of the workers of all services must be subjugated to a single purpose - to ship fuel in the full amount and deliver it as quickly as possible!

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CSO: 1829

RAILROAD

ANOMALIES OF COAL TRANSPORT BY RAIL EXPOSED, REMEDIES OFFERED

MOSCOW MATERIAL'NO-TEKHNIЧЕСКОYE SNABZHENIYE in Russian No 10, Oct 80 pp 50-53

[Article by Yu. Grechanik (Moscow): "Coal: The Arithmetic of Haulage"]

[Text] With the growth in scale of production and intensification of specialization and cooperative arrangements, transport (primarily railroad) operations are acquiring increasingly great importance. Radical improvement in the organization of freight haulage and the more rational planning thereof and further improvement in transport-economics relationships require special attention. The solution of these questions depends greatly upon USSR Gosnab organs.

Our country is first in the world in coal mining. From year to year this mining continues to increase. This year 745 million tons of the combustible rock are to be extracted from its underground storage. Its share in the country's fuel balance, as was noted at the November 1979 CPSU Central Committee Plenum, will be increased henceforth.

Mining the coal is only half of the business. It still must be delivered to the customer. Tens of thousands of railroad cars are required daily for coal hauling. Even more of them will be needed tomorrow.

In its concern for the timely delivery of the national economy's most important freight, our country is paying great attention to developing railroad transport. New railroad lines and second and third track are being built. Switching yards and freight yards are being rebuilt. Traffic-control equipment is being improved. The fleet of rolling stock is being augmented increasingly by high-powered locomotives and high load-capacity railroad cars.

But development of the railroads' materials and equipment base is not the sole path to satisfying the rising demands for haulage. Improvement of the organization of haulage is a no less important way of improving the national economy's transport service. The existing situation with respect to coal haulage is convincing proof of that.

Not Freight, but Embarrassment

Unfortunately, the growth of coal mining in the country is being accompanied by a deterioration of coal-quality grading. Some lumps reach the meter size when the

permissible standard is 30 cm. The moisture, waste-rock, sulfur and ash content is raised. During the past 10 years the shipment of such low-quality product to power-engineering workers alone increased by 60 million tons per year.

For example, coal trains that travel from the eastern regions to the country's European part are often loaded with as much as 40 percent waste rock and moisture. This means that two-fifths of the rolling stock is used irrationally. And the largest amount of solid fuel is indeed transported on a specific route. A rise in its useful content by just 5 percent would free hundreds of thousands of cars.

In the winter an excessive moistness of coal causes it to freeze during transport into a monolith. It cannot be unloaded. You have to wait. A crusher requires not only expenditure of materials but also of time. Idle time is increased. Cars damaged during unloading have to be sent for repair prematurely. And again they are unemployed. As a result, rolling stock utilization is reduced extremely appreciably. The railroads haul much less coal than they could.

The high content in the coal of ash, sulfur and other impurities accelerates wear on the power-engineering equipment and even leads to breakdowns. Soyuzglavugol' [Main Administration for the Supply and Marketing of Coal under USSR Gosplan] knows about this. Nonetheless, the unimproved procedure for fuel shipment is retained. Coal differing in content is sent on a train under a single quality certificate. Responsibility has been vested in the Administration for Standards of USSR Minugleprom [Ministry of Coal Industry] for checking coal quality. That is, control is exercised practically by the shipper himself. A single all-embracing state standard for strict objective fuel-quality monitoring is lacking. As a result, power workers are compelled to concern themselves with monitoring the acceptance of arriving coal. However, the existing rules authorize this to be done only with the participation of a representative of the shipper. While awaiting his arrival, the cars frequently are not unloaded for several days.

Low coal quality poses many complicated engineering problems for power-engineering workers. They have to create new equipment that is designed to use coal that is not distinguished by good characteristics. It becomes necessary to erect high-powered drying installations and units.

But none of this solves the transport problem. Coal with increased moisture and waste-rock content nevertheless has to be transported.

Apparently, the way out from the situation that has been created consists of something else. Experience indicates that it is much better to upgrade low-grade fuel where it is mined. The technology of this process has been developed adequately. The USSR Minugleprom system already has such plants and installations. They process many millions of tons of coal per year. However, many more of these plants and installations are needed than exist.

Coal Is Brought to Coal

Such a situation is completely permissible if it is caused by extraordinary circumstances. Like these, for example. In 1974, mining at a strip mine that supplied Uzbekistan's Angrenskaya GRES, which was situated alongside the mine, had to be halted temporarily because of diversion of the river. It was natural that coal had to be brought in from far away.

However, the need quickly passed. But the combustible rock still continues to arrive from Kirghiziya. Sredazugol' [Central Asian Administration for the Supply and Marketing of Coal] supply organs did not take the refusals of these deliveries into account. Neither did they react to the fact that the arriving fuel, for which the GRES was not designed, led at times to wear on the power equipment. And only the growing accumulation of coal, which exceeded the permissible reserve severalfold, took effect. A way out of the situation that had been created was found. But how?! Ship Angren coal, for which the local GRES was designed, out to the ends of the earth—to Kazakhstan and Kirghiziya.

And the cross-hauling heavyweights began to roll. Some of them tore along from Kirghiziya to the electric-power station with uninvited freight. The others traveled in the opposite direction with the same amount of Angren fuel. And this continued not for a month and not for a year but for about 5 years. As a result, millions of tons of coal were hauled for which more than 30,000 railroad cars were allocated.

It would seem that the conclusion was obvious. And still this is not all that was done by far. In the plan for coal freight traffic for 1980 and succeeding years, Soyuzglavugol' again called for unit trains to and from Angren. Only a decisive objection by MPS [ministry of Railways] has prevented this hauling for the time being.

The events described form a brilliant example but one that is far from unique. There is cross-hauling not only on the Central Asian but also on other railroads. The Ukraine and West Siberia, we say, are "exchanging" coking coal. Millions of tons of it are sent each year from the Kuzbass to various parts of the UkSSR. Here it is made into coke and then returned to its native districts. As a result, the steel mainline on this route is extremely overloaded constantly.

Coking coal from the Donbass [Donets Coal Basin] travels in the opposite direction. And, of course, not without a "basis"—certain West Siberian enterprises require it. One of them because it is precisely Donets coal that is called for by the technology. A question arises in this connection. Why was the enterprise created so far from the fuel it would require? The Yurga Abrasives Plant also receives coke from the Donbass. The fact is that, when local solid fuel is used, "the specific consumption of coal and electricity increases." But the fact that the haulage costs much more, that the transportation operates under an enormous strain, was not taken into consideration.

Energy-producing coal from West Siberia is tossed over to the Ukraine in no small amounts. Can it be that the Donbass does not have a similar fuel? Then why is it shipped in almost the same amounts from there in the reverse direction to Gor'kiy and Yaroslavl'? Is it not expedient to replace shipments of Donets coal to these places by direct shipments from the Kuzbass [Kuznetsk Coal Basin]?

This question was studied by competent organizations. And a completely definitive answer was given to it. USSR Gosplan, jointly with USSR Gossnab, the Ministry of Railways, and other interested ministries and agencies, adopted a decision to curtail shipments of Donets coal to Yaroslavskaya and Gor'kovskaya Oblasts. Collective measures called for these oblasts to be supplied with Kuznetsk solid fuel. More than have 10 years have passed since then. The situation has not changed.

Great Distances Are Not So Terrible

These words from a song are true, as the economists assert, but not in all actual cases. For example, great distances are terrible for transporting coal. Over a certain threshold distance it becomes irrational. Such coal costs the consumer too much.

But evidently not everyone who plans transport-economics relationships has concurred with this. You come to this conclusion involuntarily when you find out about the growth in average distance for coal haulage by rail. During the last 4-year period alone it increased 98 km.

What are the negative consequences of this growth? Alas, they are not so small. During the first 4 years of the five-year plan, coal transport cost the customer 180 million rubles more than for the former distance. The amount of work done by the railroaders increased 75.5 million ton-kilometers. For the national economy this means the loss of a real possibility for hauling an additional 46.5 million tons of freight.

Of course, the fact that coal mining is growing mainly in the eastern regions, while the main consumers are in the country's European portion, cannot help but lead to an increase in distances for transporting coal. Unfortunately, aside from this inevitability, there are no few unjustified, excessively long routes. Thus, 1 million tons of Kuznetsk coal is shipped annually for more than 4,000 km to Arkhangel'skaya and Murmanskaya oblasts and the Karelian ASSR. Yet this is the zone of distribution of the most rich Pechora Basin fuel of a similar type.

Why does this occur? The main cause is the fact that Kuznetsk coal costs less than half as much. But of no little importance also is the fact that the railroad charges on superlong-distance haulage have been rescinded. Therefore, today its cost is such that even large-scale freight is allowed to be sent to the ends of the earth. So it is that the shipment of coal from the Kuzbass, although it is 2.5 times as expensive as coal shipped from the Pechora Basin, is still profitable.

However, this arithmetic is of local significance. It is not in accordance with the interests of national economic development as a whole. The decision to curtail haulage of Kuznetsk coal to Arkhangel'skaya and Murmanskaya oblasts and the Karelian ASSR because of the possibility of using Pechora Basin coal in these areas, which USSR Gosplan and USSR Gosstrib adopted, is correct in paying attention to this.

The length of the steel track from the Kuzbass to Dushanbe exceeds 4,000 km. To Ashkhabad it is the same. To Tashkent it is one-third less. But such a distance does not embarrass those who do not ponder transport outlays or overloading of the railroads. And so about 400,000 tons of Kuznetsk coal is sent annually to municipal and domestic-services enterprises of the above-mentioned cities of Central Asia. Meanwhile, it would be advantageous to convert them to local fuel and to gas-mazut motor fuel. Indeed, the haulage costs customers 622,000 rubles and gives the railroaders 1.3 billion ton-kilometers of additional work.

This opinion was substantiated 11 years ago. USSR Gosplan, jointly with USSR Gosstrib, MPS and other interested ministries and agencies, then adopted a decree on this question. It recognized the undesirability of the haulage named above by

virtue of the potential and necessity for converting Central Asia's municipal and domestic-services enterprises to local fuel. But the decree remains unimplemented.

When a Hand Is Offered

Excessively long distances, figuratively speaking, make one end of the cane that is the scourge of the railroads. The other is the short haul. The irrationality of the latter is in no way inferior to the first. The time a railroad car spends en route is insignificantly small in comparison with the idle time associated with loading, unloading, switching and other necessary operations. It does not exceed 5-7 percent of the turnaround time. Expenditures per ton-kilometer here are 8-fold to 10-fold those of system averages. The transporting of freight over short distances (less than 200 km) sharply reduces the beneficial utilization of rolling stock and the overall effectiveness of the steel arterials.

According to MPS data, last year 92 million tons of coal were shipped over distances of 100-200 km, 67 million tons over distances of 50-100 km, and 44 million tons over distances of 30-50 km. More than 105 million tons of solid fuel made the trip within a radius of 30 km. A long time was spent on these microroutes alone by 1.6 million railroad cars.

Nor are the statistics on reduction of short hauls too consoling. During the first 4 years of the five-year plan, the amount of coal shipped over distances of 50-100 and 30-50 km was reduced by 4 million tons. Simultaneously, the amount of solid fuel transported within a radius of 100-200 km increased by 6 million tons.

The time has come to wage a decisive campaign to rescue the railroads from the short hauls that are not characteristic of them. There are many ways to solve this problem. One of them is the development of continuous-operation type industrial transport: conveyerized transporters, suspended cableways and pneumatic-container pipelines. The effectiveness of these progressive types of transport is 1½-fold better than that of rail transport. Nevertheless, the necessary attention is not being paid to their wide use.

It is desirable to use even automotive transport over short distances, where the fuel customer is far from the railroad. Under any circumstances, the truck delivers the freight, as they say, from door to door (from the sender to the receiver).

Rationalization of coal haulage embraces a wide range of questions. Solving them most rapidly depends upon the joint efforts of numerous ministries and agencies, particularly of USSR Gosplan and USSR Gosstnab, Gosstandart [State Committee for Standards], the USSR Ministry of Coal Industry, and MPS.

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RAILROAD

IRREGULARITIES IN FREIGHT SHIPMENT

Moscow TRUD in Russian 16 Nov 80 p 2

[Article by G. Polozov, assistant to the USSR General Prosecutor: "From Point 'A' to Point 'B'—the Law Is Binding on All"]

[Text] Why does thievery occur on the nation's railroads?

A railroad car with valuable national economic freight was sent from the Artik Railroad Yard, which is in Armenia, to the Gali Railroad Yard. It was sent out, but they forgot to attach a document to it. The car stood for about 3½ months at the Poti Railroad Yard, and then by mistake it was included in a trainload of empties and sent to the Rioni Railroad Yard. After that the car and the load vanished into thin air....

In the railroaders' jargon, such cases are identified as being separated from the papers. More than 800 such "separations" were recorded on the Tbilisi Division of the Transbaykal Railroad during the year. Unfortunately, even on other railroads such situations are not unique. As a result, delivery dates for freight are not being met, and much effort is spent searching for it. And, moreover, such neglected cars, which wander about the railroads, often fall easy prey to light-fingered people.

Much is being done in our country to improve operation of the railroads, to provide for the security of the freight being hauled. But still, there are cases of plundering even now, and losses and damage to freight bring monetary losses.

Two containers were dispatched from the railroad yard at Makhachkala, a port of the North Caucasus Railroad, without papers. They managed to find the freight only after 8 months. The railroad yard's manager not only did not take measures to be compensated by the guilty persons for the damage inflicted but even rose to their defense when the transportation prosecutor brought suit in court. It is impossible to consider such "kindness" for the state's case as anything but tolerance toward conscienceless workers.

What does this come to, in the final analysis? Here is data for the Moldavian Railroad: during the year, only 0.8 percent of the damage caused by the loss of freight here during haulage was exacted from specific guilty parties. The remaining damage to the state was reimbursed from the railroads' funds—in other words, by the state itself. Officials and supervisors of enterprises and organizations

have not been called to account at all for neglect in organizing accountability for and protection of material valuables; this has led to loss or damage of freight. And if, from time to time, they make someone responsible here, it is mainly a "little guy."

The law has established precisely that material harm caused the state should be reimbursed by the guilty person. And economic penalties applied to railroads for losses during freight hauling should not replace the personal responsibility of the workers.

One of the serious circumstances that promote plundering on the railroads is the protection of freight, which is unsatisfactory at times, especially on trains that are held temporarily at intermediate railroad yards. Often they are stuck there for an extremely long time, because of which even the expression "abandoned" trains has appeared.

At the Kineri Railroad Yard of the Kazan' Division, Kuybyshev Railroad, a train with valuable freight and the locomotive were "abandoned" without protection for 36 hours. This proved to be time enough for petty thieves who, after opening 7 containers, plundered radio equipment and woolen products worth more than 50,000 rubles.

Railroad supervisors often complain about the incompleteness of the service of the VOKHR [Internal Security Troops of the Republic]. Some even try to present such a situation as an almost objective factor. However, the solution of personnel and organizational problems is a matter for the railroads themselves which no one but they can solve. Great opportunities are at the disposal of the volunteer public-order squads, people's control groups and posts, Komsomol "spotlighters," and others. Unfortunately, all this is often mentioned only on paper.

Investigative and prosecutorial experience indicate that no little thievery is committed on the grounds of the freight yards and at container loading docks. And almost always, in such cases, it is explained that the circumstance that facilitated the commission of the crime was mismanaged upkeep of these places for the protection and handling of freight. The reports of the investigators and prosecutors to the transport-enterprise supervisors often state that the freight yards and container docks have not been fenced off, there is no guard, a pass system is lacking, and electric lighting at night is inadequate.

At the Korpunaya Railroad Yard--an element of the Leningrad Railroad Terminal--9 youths engaged unhindered in freight crimes for a period of 2 years, stealing more than 18,000 rubles' worth of freight. At the freight yard of the Pridacha Railroad Yard of the Voronezh Division, Southeastern Railroad, more than 90 thefts of various types of freight were reported in a year. This figure itself indicates that railroad-yard supervisors, unfortunately, are not inclined to draw conclusions from these lessons that the thieves have been giving them.

When valuable consumer goods are stolen from a car or container, the first version that the investigator usually advances mentions participation in the robbery of a railroad worker, that is, a person who is acquainted with the nature of the freight being hauled. And it must be noted that he is not often mistaken. About 42 percent of the persons convicted of stealing from railroad transport are railroaders themselves. In the Khabarovsk Division of the Far East Railroad, this percentage is still higher.

At the Ugol'naya Railroad Yard of the Far Eastern Railroad, trainmakers Yermolin and Fursov stole a tent and lighting equipment, with an automotive trailer worth more than 2,000 rubles, from a railroad car. How did the supervisors of the Vladivostok Division of the railroad react to this? They discussed it at an ad hoc conference and they gave an order, but then, as if apologizing for extraordinary severity, they gave the thieves bonuses....The case of the crime was concealed from the investigative organs.

And here is another example from the work experience of the same institution. In a period of 2 months deputy chief Tokachev of the Vladivostok Railroad Yard received two reprimands for not taking measures to protect wheat when it was spilled on the railroad yard's tracks. But during these same 2 months, Tokachev received bonus awards. In such cases a doubt about the sincerity of the orders and measures that are taken against law violators involuntarily creeps in. What educational benefit can be said for it when one hand of a person is punished for a serious violation, and the other is given an award for an unknown reason?

MPS [Ministry of Railways] and its organs have taken no few measures in recent years to increase the railroaders' responsibility for the people's property that has been entrusted to them. At many places this has yielded positive results. However, a certain portion of the officials, evidently considering it too much bother to themselves to establish a procedure, try to adapt to the situation in their own way.

Prosecuting organs have more than once discovered cases where attempts were made to conceal damage from the loss of a portion of the freight during transport or to understate it falsely, or to blame the freight senders or the receivers in order to be freed by all sorts of truths and untruths, from responsibility for the loss. Cases are known when there have been no reports about freight thefts to the investigative organs. This is done in order to create an appearance of well-being in providing protection for socialist property.

The chief of Moscow's Leningrad-Switching Yard Kholodov and his deputy El'tarov thought up an extremely original method for abandoning responsibility. Without troubling themselves with concerns about providing protection for freight, in each case of freight loss they made up two reports each. One noted that damage of the cargo occurred through the fault of the sender, and the responsibility, consequently, was placed on him. In the other, if the sender suddenly becomes stubborn and begins to complain, the true cause is pointed out--violation of the instructions by the railroad yards' workers. And such double bookkeeping remained unnoticed for a fairly long time by the railroad administration.

The trade union organizations, which have adequate rights and opportunities to execute large-scale social monitoring over the work of their enterprises in making strict demands on those who do not protect the people's national goods, could take a more active part in guiding procedure on the railroads. Neither must one forget to speak about the role of superior organs of railway transport administration in supporting socialist legality and state discipline. Inspections indicate that these organs do not always exert an active influence. The potential for inspection staffs to monitor the status of protection of socialist property is being used extremely poorly in a number of places. In many reports of inspection this question is not reflected at all, and supervisors reconcile themselves to such inspections. They reason this way: "Since the inspection did not reveal

violations, then that means there are none, and that means all is in order." Whereas the data of many criminal cases is sufficiently eloquent testimony of what such complacency can lead to at times.

However, it must also be noted in such cases that when serious negligence is revealed, not always are realistic practical measures taken to correct the situation. The technical and economic council of the Riga Division of the Baltic Railroad repeatedly discussed at its meetings the status of commercial and freight work at the Riga Commercial Goods Railroad Yard. For a number of years, an extremely unsatisfactory situation was ascertained. The railroad yard chief Murashov and his deputy Mikhalkov repeatedly were called to disciplinary account, but nothing further ever happened.

Reinforcement of monitoring by railroad-transport management organs over the observance of socialist legality at subordinate enterprises is an important prerequisite to further strengthening state discipline on the railroads.

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RAILROAD

DELAYS IN DELIVERING BELORUSSIAN POTATOES

Moscow GUDOK in Russian 19 Oct 80 p 1

[Article by D. Sverkunov (Minsk): "The Potato Cannot Wait"]

[Text] This spring was difficult for rural workers of Belorussia--the weather stayed rainy and cold. There were even light frosts not far away.

This month railroaders should ship at least 30,000 tons of tubers daily. But this pace has not been achieved yet. While in past years potatoes were sent by unit trains to Moscow and Leningrad, speeding up movement of the freight and allowing the tubers to be preserved better, during the current harvest season it was only in October that they managed to form the first unit train for Leningrad from the Baranovichi Division railroad yard.

Meanwhile, it had been known for a long time how many potatoes were to be sent, from which railroad yard, and where they were to be shipped. But the railroaders and the procurement people had not agreed on joint actions.

Many misunderstandings arise on the part of the participating entities about orders for railroad cars. On the first of October, for example, according to the railroad administration's information, procurement personnel requested 523 cars, but according to Belkoopsoyuz [Belorussian SSR Cooperative Union] information the figure was only 472. According to railroad administration information, 424 cars were loaded up, but Belkoopsoyuz asserts that 356 were loaded. According to procurement personnel data, only 2 cars remained unloaded, but according to the railroad's statistics the figure was 130! Procurement personnel at the Pukhovich Railroad Yard ordered 18 cars. Transport workers of the Minsk Division furnished 9. But only 4 were loaded up, there being no more potatoes.

The picture was the same on the Gomel', Mogilev and other divisions. As a result, despite a great shortage of boxcars on the railroad, two trains stand idle excessively every day. But indeed there is also good experience in Belorussia. Matters are going on well on the part of procurement personnel of Grodnenskaya Oblast and the Baranovichi Division, and participating workers at the Novoyel'naya and Slonim railroad yards and a number of other places are operating with precision. But their experience still has not found support and dissemination.

11409

CSO: 1829

OCEAN AND RIVER

FIFTIETH ANNIVERSARY OF ODESSA INSTITUTE FOR MERCHANT FLEET ENGINEERS

Moscow MORSKOY FLOT in Russian No 7, 1980 pp 34-38

[Article by V. Zagoruyko, rector of OIIME, doctor of technical sciences, professor]

[Excerpt] The Odessa Institute of Merchant Fleet Engineers is celebrating its 50th anniversary.

The institute provides its graduates with deep theoretical knowledge and extensive practical skills in their selected specialty. A total of 400 teachers, including more than 200 doctors of science and professors, candidates of science and associate professors, work in 35 departments. Personnel are trained in six faculties in seven specialties.

The institute's material and technical base is being constantly improved and expanded. A tall academic building was put into operation in 1975 and block "B" of a tall building with three lecture halls of the scientific and technical library imeni Professor G. K. Suslov with 450 seats, two continuous auditoriums of 250 seats each and a cafe for 80 seats were put into operation in 1977.

An indication of the daily concern of the party and government on creation of the necessary conditions of everyday life, leisure and recreation of students is putting a new student dormitory of improved planning for 1,012 beds into operation on the eve of our anniversary.

The institute was founded on the basis of the Faculty of Port Construction and Hydroengineering Complexes of the Odessa Polytechnical Institute consisting of the hydroengineering, operational and mechanical faculties. It was initially turned over to management of the Peoples Commissariat of Railways, but it was soon subordinated to the Peoples Commissariat of Water Transport, after which it was named the Odessa Institute of Water Transport Engineers. By the end of 1930 there were 17 departments and five faculties in the institute. Among the first pedagogues, educators and scientists of OIIVT can be named Professors G. K. Suslov, S. T. Kamenskiy, P. A. Minyayev, V. A. Anichkov, V. S. Martynovskiy and others.

A workers' faculty with branches at Novorossiysk and Kherson and later at Kiev and Dnepropetrovsk was organized to assist production workers of water transport coming to the institute. During its activity, the workers' faculty has prepared more than 2,000 persons for admission to the institute. Even during the first year of activity of the institute, a graduate program was created which played an

important role in training teaching and scientific personnel. Creation of a Real Design Office, later reorganized to a scientific research sector (NIS), contributed to expansion and deepening of contacts with industry.

Engineering, production, chemical, physics, hydraulics and X-ray laboratories were created in 1930-1940; offices of the fundamentals of Marxism-Leninism, ship machinery, ship architecture, machine parts, operation of maritime transport, mathematics and mechanics, maritime transport and also academic-auxiliary machine shops were created.

During World War II the institute collective, like the entire country, reorganized its work according to the requirements of wartime. Many colleagues and students of the institute campaigned bravely from the first days of the war in the ranks of the Red Army and Navy and acted without fear in the rear of the enemy. Among them were former students Heroes of the Soviet Union K. P. Ol'shanskiy, G. M. Palamarchuk and Reconnaissance Specialist N. A. Geft.

The institute was evacuated to Rostov-na-Donu on 3 August 1941 and later to Samarkand and was redeployed to Astrakhan' in the summer of 1943. The new academic year began at Odessa on 17 September 1944.

During the 1944-1945 academic year, the collective of the institute carried out a great deal of work to restore the laboratories, offices, departments, academic building and student dormitories.

The institute was renamed the Odessa Institute of Merchant Fleet Engineers on 27 April 1945, by authorization of the USSR Council of Peoples Commissars. It was decided during these years to create higher engineering nautical schools. Many of the teachers of the institute participated in organization and establishment of them and became staff pedagogues of the schools.

As the national economy of the USSR recovered and developed, the institute was also strengthened both along the line of quantitative and qualitative indicators. Scientists developed the most important topics for maritime transport: improving the designs of docks and cranes, increasing labor productivity and reducing the cost of cargo operations at maritime ports, selection of standard dimensions of ships of the Soviet Danube Shipping Company, normalization of ship loads, mechanization of laborious operations in ship repair, investigation of the dynamics of main ship engines and so on.

Whereas the student contingent in 1945-1946 comprised approximately 1,500 persons, it comprised approximately 4,700 in 1959-1960. There were 104 and 230 teachers, respectively. The 23 well-equipped laboratories and 17 specialized offices, academic-experimental shops and the library operated well. The output of engineers was increased: 30 specialists went into industry in 1946, approximately 250 in 1950 and more than 500 in 1960.

By the beginning of the 1970s. OIIMF occupied one of the leading positions among higher academic institutions of the sector both in the quality of training specialists and in the level of scientific work. The academic-laboratory building of the institute was constructed and turned over for operation, which permitted considerable improvement of the material and technical base of the departments, laboratories and faculties.

A Faculty for Raising Qualifications (FPK) for management and engineering and technical personnel of the shore services and subdivisions of maritime transport was created at the institute in 1968. A department of the FPK of the institute has been functioning in Moscow since 1972 to raise qualifications of workers of the central apparatus of the ministry.

Engineering and technical and management personnel of maritime transport having a certified higher education are retrained at the FPK. They study the latest advances of Soviet and foreign science and technology, efficient methods of planning and economic stimulation, scientific organization of labor and management using computer technology, means of mechanization and automation of production processes and exchange leading scientific and production engineering experience.

More than 5,000 specialists of maritime transport, including managers of ship repair yards, ports, shipping companies and workers of the Ministry of the Merchant Fleet, have graduated from the FPK during the past few years.

Studies are carried out with students in 10 specialties in equipped teaching auditoriums, offices and laboratories of the institute. The high level of the academic process is supported by the professorial and instructor staff of the institute and leading specialists of scientific research institutions and enterprises of the merchant fleet and the ministry.

Since 1969 a preparatory department with 100 students has been functioning at OIIMF, where leading workers and kolkhoz workers with length of service of not less than a year and also reservists from the Soviet Army and Navy are included by appointments of enterprises, kolkhozes, sovkhozes and military units.

Training was carried out successfully during the past few years in this division, entrance exams were passed and more than 700 persons were admitted to the institute.

Since 1950 students from abroad have been studying at the institute. More than 500 engineers from 30 countries have been trained during the past years. Having successfully completed graduate study, 41 foreign specialists defended their candidate dissertation and more than 50 engineers from the socialist and developing countries passed practical scientific probationary period.

The Odessa Institute of Merchant Fleet Engineers was awarded the Order of Friendship by ukase of the president of SRV [Socialist Republic of Viet Nam] on 30 January 1978 for its efforts in assisting the Socialist Republic of Viet Nam in training scientific and technical personnel.

More than 250 students and graduate students from Europe, Asia, Africa and Latin America are now being trained at the institute.

The instructors of the institute assist the Republic of Cuba in training its own national personnel for maritime transport at all levels--from workers of mass vocations for the fleet and ports to engineers. They have developed academic plans of specialties and working programs in a number of disciplines and have conducted a large amount of pedagogical, methodical and organizational work.

One must dwell separately on a form of personnel training such as the evening and correspondence study system, which offers the workers of enterprises and institutions of maritime transport the opportunity to receive a higher education without a break from service. At various times the institute had a correspondence faculty at Rostov-na-Donu, an evening faculty at Baku and academic-consultation offices at Astrakhan, Zhdanov, Moscow and Chardzhou.

The OIIMF now has at its disposal evening and correspondence faculties at Odessa and evening-correspondence faculties at Baku and Zhdanov. The evening and correspondence students at Odessa are trained at the institute to the efforts of the regular professorial-instructor staff. Graduates of the faculties work successfully in many subdivisions of the ministry--in shipping companies, design offices, at ship repair yards and so on.

Among former graduates of the Odessa evening faculty are senior engineer of the atomic icebreaker "Arktika" and participant of the approach to the pole Yu. S. Pilyavets, chief of the engineering department of the Black Sea Shipping Company V. F. Olesinskiy and many others.

Approximately 2,400 students are now studying at the Odessa evening and correspondence faculties. Many of them are shock workers of communist labor and production leaders who have successfully combined production activity with training.

An evening-correspondence faculty has been functioning since 1960 at Zhdanov, which prepares personnel for organizations and enterprises of the fleet and the administration of the Azov Shipping Company. Training is carried out by the following specialties: the economics of maritime transport, navigation on maritime routes, hydroengineering construction of waterways and ports, ship construction and ship repair.

The evening-correspondence faculty at Baku has existed since 1958. During this time it has grown into a large branch of OIIMF and has graduated more than 1,600 ship engineers, shipwrights, machinists, hydroengineers and operators for the maritime transport of the Caspian Sea. Eight laboratories, including a ship mechanical, electrical engineering, thermodynamics, mechanization of ports and so on, have been created.

The contingent of daytime, evening and correspondence students now comprises approximately 7,500 persons at our institute.

The institute auditoriums are equipped with complex teaching hardware.

The academic television center permits simultaneous transmission on four programs. The offices and laboratories of the departments are supplied with visual aids, literature and reference materials and are equipped with means of programmed teaching and checking, different devices, mechanisms, installation and apparatus and the most modern equipment.

Digital, analog and electronic computers of the latest generations have been installed in the computer laboratory. A student computer center significantly facilitates work in course and diploma design, which is research in nature and is carried out by requests and on topics of the enterprises of maritime transport.

During the past few years the institute has trained more than 20,000 specialists who support the work of the fleet, ports and ship repair yards.

An indication of the high vocational training of graduates is their activity in various management and engineering posts at enterprises and in organizations of the country's maritime transport, in different scientific institutions, in kom-somol, trade-union, Soviet and party work, in foreign consulates of the country and in the central apparatus of the Ministry of the Merchant Fleet.

Among them are chiefs of ports V. I. Zolotarev, T. A. Martirosyan, V. L. Bykov, V. M. Yevstigneyev and A. D. Karachenkov, directors of ship repair yards V. S. Yavorskiy, A. N. Rogulin and L. S. Kunin, director of the Black Sea TsPKB [Central planning-design office] S. M. Nunuparov, chiefs of shipping companies S. A. Luk'yanchenko, Yu. I. Ostrovskiy, V. I. Dyrchenko, V. V. Pilipenko and D. A. Gashumov, chiefs of administrations of MGF V. Kh. Dubchak, V. L. D'yakonenko and A. V. Borisov, deputy ministers A. V. Goldobenko and L. P. Nedyak, minister of the merchant fleet, Hero of Socialist Labor T. B. Guzhenko and many others.

During the 50 years of its activity, OIIMF has grown into a large scientific center which solves serious problems directed toward increasing the efficiency of maritime transport and of improving the quality of work of all its sections.

The institute has available significant scientific potential determined by a large detachment of scientists, among which a number of prominent specialists are creators of scientific schools and trends and talented educators of scientifically-oriented youth.

During the past 10 years alone, professors N. I. Yerofeyev, M. V. Demikhovskiy, A. G. Tabachnikov, V. A. Zagoruyko, V. V. Mazur, I. N. Shutov, M. I. Zbarskiy and I. D. Konoplev have defended their doctoral dissertations and more than 170 candidate dissertations have been defended.

The success achieved in the institute's scientific activity is also determined and strengthened by close ties and business contacts with shipping companies, enterprises and organizations of practically all marine basins of the country, head scientific research institutes of the ministry such as TsNIIMF [Central Scientific Research Institute of Merchant Fleet Engineers] and Soyuzmorniproyekt [State Planning, Design and Scientific Research Institute of Marine Transportation of the Ministry of the Maritime Fleet, USSR], institutes of the USSR Academy of Sciences, the Ukrainian SSR Academy of Sciences and other republic academies and many leading scientific research institutions of a number of related sectors of the national economy.

The main trends of scientific research activity of the institute are determined by the practical needs of the sector, the problems of further development and technical progress of maritime transport and also training of highly qualified specialists for the national economy of the USSR and a number of socialist and developing foreign countries.

The scientific research activity of the departments of history of the CPSU, Marxist-Leninist philosophy and political economy is directed toward further development of

the social sciences and of enhancing their role in communist education of young students and building of communism.

Many monographs, books and brochures and tens of articles have recently been prepared at these departments alone (including abroad) and hundreds of reports have been read at enterprises and in patronage rayons of the oblast and at enterprises of maritime transport.

The scientific collectives of the faculty for management of maritime transport and of the engineering-economic faculty are developing ways for further improving economic methods of management and automation of production control in maritime transport.

Problems of developing line navigation of cargo shipments by reinforced cargo spaces, of improving the operational management of fleet operation and of the ASU [Automated control system] Morflot, of increasing the economic effectiveness of transport ships and of developing cost-accounting at enterprises of the merchant fleet, improving the complex future planning of development of maritime transport and so on are being solved at the institute. The "Specifications for Location and Securing of Heavy Weights and Large Cargo on Vessels of MSF," "Regulations on Shipment of Dangerous Cargo on Vessels of MSF," "Regulations on the Optimum Technical Plan-Schedule of Ship Handling" and other documents important for the operational activity of the merchant fleet have been developed and put into production, investigations are being carried out in the field of predicting the development of maritime transport and of its enterprises, justification for new classes of ships and port facilities, scientific organization of labor and improvement of the economic incentives system, planning of capital investments and capital construction and so on.

The results of work on improving the organization and planning of fleet activity, design of automating calculations of the annual plan of ASPTR [expansion unknown], investigation of the economic effect of operating dry-cargo vessels and so on have been put into practice of enterprises of the merchant fleet. Creation of a sector scientific research laboratory for automation of maritime transport administration at the institute contributes to fulfillment and putting into practice the results of NIR [Scientific research work] in this trend.

Scientists of the Ship Machinery Faculty are working in the direction of improving the power plants of merchant vessels and methods of their technical operation and repair, improving the control of the cruising and maneuvering conditions of the propulsion complexes of ships, determining the optimum ventilation and temperature-humidity conditions in transport of dangerous and perishable cargo, future development of refrigerated ships, gas carriers and so on. Existing suggestions are being analyzed and new ones are being developed to improve the future power plants and heating systems, the reliability of plants is being investigated, the thermodynamic properties of automation and optimization of the thermal regimes of machine plants and so on are being studied.

Devices for monitoring the thermal and vibrational state of turbines, developed in the turbine laboratory, have been introduced on 20 tankers of the "Sofiya" class and on five tankers of the "Krym" class. Methods of designing fuel apparatus

suggested by colleagues of the institute are being used extensively at the machine building plant which produces internal combustion engines for the merchant fleet.

In 1964 a problems laboratory of ship refrigerator equipment and applied thermodynamics was created at the Department of Thermodynamics and General Heat Engineering. Colleagues of the laboratory have carried out important investigations on prolonged storage of meat, preservation of some cargo and other investigations, the results of which have been introduced on vessels of the ministry.

A design of a specialized section for pipeline repair has been created jointly with the Ship Repair Yard imeni 50-letiya of the Soviet Ukraine and one of the country's first atlases of the structure of steels has been developed for the USSR Registry.

Problems of improving the operation and design of ships, their seaworthiness and strength qualities have been at the center of attention at the scientific workers of the Shipwright Faculty during the past few years.

Technical assignments are being compiled on construction of promising classes of ships of the merchant fleet and extensive investigations are being conducted on the seakeeping qualities and navigation safety of vessels. Methods of estimating the strength, stability, vibration and reliability of structures of merchant vessels used in design, operation and repair of them are being developed.

Methods of calculating ship and floating dock structures and suggestions for increasing the carrying capacity of large ships when transporting heavy cargo and large-diameter pipes, reducing the vibration of a number of ships, developing lighter carriers of the "Yulius Fuchik" class and so on, developed at the institute, are being introduced into the practice of shipping companies and shipyards of the merchant fleet and of the shipbuilding industry.

The scientific collectives of the Hydroengineering Faculty and the Faculty of Port Mechanization are working out problems of increasing the capacity of docks, improving the technical operation of port objects, improving the designs of deepwater and enclosing installations and also improvement and development of means of complex mechanization and automation of port transloading processes. Investigations are also being conducted to increase the efficiency of port and ship transloading installations and special attention is being devoted to investigations to develop means of complex mechanization and automation, on which the operation of maritime ports as a whole depends.

Introduction of the results of investigations at maritime ports in the field of interaction of port installations with the soil and water medium and ship, the durability of marine hydroengineering installations of concrete and metal and increasing the effectiveness of technical operation of port structures led to an increase of the class and an increase of the carrying capacity and depth of dock installations at Odessa, Il'ichevsk, Novorossiysk, Riga, Liyepaya and other ports, which produced a significant saving. Investigations to protect the basins of Sochi, Yalta, Tuapsa and other ports have been carried out and introduced according to the tasks of ministry enterprises. Many normative documents, existing construction norms and rules have been compiled with regard to the work of OIIMF scientists.

Investigations to find effective means to eliminate the consequences of accidental oil spills occupy a special place. Special systems were developed with the participation of institute scientists for the world's first multipurpose environmental protection ship "Svetlomor."

During the past 10 years scientific workers have published approximately 200 textbooks and training aids, 50 monographs and more than 2,000 scientific articles. The saving due to introduction of scientific developments of scientists into industry exceeded 12 million rubles during four years of the 10th Five-Year Plan alone.

Approximately 2,000 students joined into a student scientific society participate actively in the scientific research work of the departments. Organizing committees under the chairmanship of the deans, who implement all preparatory and organizational measures and carry out direct supervision of NIRS (student scientific research work) work in the faculties for best organization and provision of quality of scientific training of students.

Scientific research work is carried out by students in the following forms: UIRS (academic-research work of students), called on to acquaint the students with methods of scientific research, circles and seminars attached to departments in which the students are trained to conduct independent research work on a specific topic and independent scientific research work on a topic under the supervision of a scientific supervisor.

All this provides a complex approach to NIRS and interrelationship and continuity of all its forms.

A student scientific center was created in 1979 which included the following student offices: design, economic analysis, patent research and scientific research. The main purpose of the center is extensive recruitment of students to solving timely problems of the Ministry of the Merchant Fleet on the basis of participation in practical realization of problems faced by the fleet, in development of which participate institute scientists.

In 1979 student Ye. Beloshitskaya was awarded a medal for the best student work and the VSNTS (All-Union Council of Scientific and Technical Societies) prize and student V. Shcherbinin was awarded the diploma of Minvuz (Ministry of Higher and Secondary Specialized Education) of the USSR, 13 student papers have been noted by diplomas of the republic competition and 24 papers have been awarded diplomas of city competition on technical sciences.

The entire process of student training and the participation in the scientific research work of the departments and direct association with production and with development of the country's maritime transport contribute to improvement of the vocational training of future specialists of maritime transport. The system of theoretical and practical training is continuously related to wide development of social and political practice conducted on ships, at enterprises and in organizations of the sector. Students of the institute are developing skills in independent activity in the worker collectives and are forming the required qualities of future educator and organizer of production and a propagandist of communist ideas.

The komsomol organization of the institute has always stood for the sources of many important beginnings of the country's student body. They include student construction detachments. A detachment of OIIMF students consisting of 50 persons worked in 1964 as part of the virgin lands oblast detachment at the Ostrovskiy Sovkhoz, Kamyshinskiy Rayon, Kustanayskaya Oblast.

During the past few years the work geography of the detachments and their quantitative composition were expanded significantly. The students of the institute have worked at Dickson, Khatanga, Kholmsk, Korsakov and Vanino ports, in Tyumenskaya and Odesskaya oblasts, in construction of the town of Gagarin and many other objects. Long friendship links OIIMF with Tiksi port. Specialized detachments of the institute, which assist the port collective in fulfilling national economic plans, have been working in this Arctic port since 1965. In 1976 the Tiksi detachment was awarded the certificate of the Komsomol Central Committee and the Honorary Banner of the Yakutsk Komsomol Obkom.

Student brigades have established a number of records on loading and unloading in port and brigade members have frequently won the rank "Best in occupation."

During the past few years student detachments of the institute have worked at Rani, Izmail, Il'ichevsk and Odessa ports and have participated in construction of Yuzhniy port. The student detachment Karavella worked on construction of the Il'ichevsk-Varna ferry crossing. More than 500 students participate annually in the activity of student detachments.

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OCEAN AND RIVER

MEETING AT ODESSA INSTITUTE FOR MERCHANT FLEET ENGINEERS DISCUSSED

Moscow MORSKOY FLOT in Russian No 7, 1980 pp 41-42

[Article by G. Fayn and V. Chekalovets: "The Science of Management in the Academic Process"]

[Text] Our country's first conference of the professor-instructor staff of nautical vuzes and secondary academic institutions was held in February at the Odessa Institute for Merchant Fleet Engineers on the problem "Scientific Bases of Management of Maritime Transport and Their Reflection in the Academic Process." Managers of the ASU [Automated control system] department of MMF [Ministry of the Merchant Fleet], the Central Academic-Methods Office Attached to UUZ [Administration of educational institutions] of MMF, the Black Sea Shipping Company, instructors and scientific workers of OIIMF, OVIMU [Odessa Higher Engineering Nautical School], LVIMU [Leningrad Higher Engineering Nautical School], DVVIMU [Far Eastern Higher Engineering Nautical School], NVIMU [expansion unknown] and secondary specialized educational institutions and representatives of maritime enterprises and organizations of Odessa participated in its work.

Improvement of management of the production process in maritime transport is of primary significance to increase its operating efficiency. Under modern conditions, the role of management and development of social production is increasing constantly, with regard to which extensive work is being conducted at the Ministry of the Merchant Fleet on improving the management of different aspects of the activity of maritime transport as a whole and of its associations and enterprises.

Successful solution of the problem is related directly to personnel training and retraining of managers of the production subdivisions of maritime transport. As is known, L. I. Brezhnev emphasized at the November (1979) Plenary Session of the CPSU Central Committee that "organization of labor must be seriously improved and qualified personnel must be trained in time."

The conference participants noted that significant work is being conducted in the academic institutions of the MMF in this direction. The latest advances in the field of operational management of the fleet, ports and other enterprises of maritime transport are reflected in the teaching of all economic and organization and technical disciplines. Study of "The Scientific Fundamentals of Management of Maritime Transport" has been introduced at the Engineering-Economic Faculty of OIIMF since 1972. This discipline was subsequently included in the academic plans for raising the qualifications of management and engineering and technical

personnel of the sector at the FPK of OIIMF, LVIMU and DVVIMU and at courses for raising qualifications attached to higher engineering nautical schools. It is now being taught for practically all specialties in higher and secondary specialized academic institutions of MMF in the form of a separate course or as an integral part of the "Economics of Maritime Transport." Associate Professors L. Gas'kov (LVIMU), S. Topchiy and O. Kondrashikhin (OIIMF) and Professor A. Prolov (DVVIMU) devoted their reports to problems of further improving the teaching of this subject, its structure and to the academic-methodical problems in light of modern requirements on training of specialists.

Professor M. Zharskiy and Associate Professor A. Cherkesov-Tsybizov (OIIMF) turned attention to the fact that management is now acquiring a social nature--this is primarily working with people. In this regard training of specialists in methods of scientific organization of labor, its normalization and payment and more widespread use of the results of economic analysis with management decision-making is of timely significance.

A new important step in training of specialists in the field of management of maritime transport, as was noted at the conference, was creation of a Faculty of Management of Maritime Transport at OIIMF in 1978, which is called upon to become a scientific methods center in the sector on training of specialists in the field of management.

The conference participants devoted special attention to the deficiencies which reduce the effectiveness of training the necessary personnel. There is essentially no laboratory equipment in the academic centers for conducting exercises on management problems. Too few textbooks and study aids, there is a shortage of methodical developments and there are no visual aids--diapositives, movie films, slides and color posters which could be used successfully for these courses during the academic process. Training of the professor-instructor staff is made extremely difficult with regard to the absence of a specialized council in the sector on awarding scientific degrees in the field of management of maritime transport.

A total of 19 reports and 10 communications was heard and discussed at the conference. Extensive recommendations which provide for further improvement of teaching of the scientific fundamentals of management in academic institutions of MMF were adopted from the results of the work.

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OCEAN AND RIVER

SPECIFICATIONS FOR ICEBREAKER 'OTTO SCHMIDT'

Moscow MORSKOY FLOT in Russian No 7, 1980 pp 43-46

[Article by Department Chief of the Expeditionary Fleet Base V. Pak and Chief Mechanic onboard the "Otto Schmidt" V. Semenov: "The Icebreaker 'Otto Schmidt'"]

[Text] Last year the State flag was hoisted over the first domestic scientific-research icebreaker. This ship bears the name of the famous Soviet polar explorer, Otto Yul'yevich Schmidt. This icebreaker is designed for endurance cruising in the zone of passage between open water and the fields of perennial pack ice. At present, these regions are little explored, since it is impossible to establish drifting polar scientific stations here and these regions are practically inaccessible for the operations of the usual types of scientific research vessels.

The design for the vessel was developed on the basis of the "Vasily Pronchishchev" harbor icebreaker. The contour of the above-water portion of the bow extremity was altered, the area of the upper deck at the stern was expanded (to install oceanographic equipment) and the bow screw was removed. The bow propulsion-motor compartment was used for the installation of an auxiliary power plant.

The vessel was constructed according to the regulations and under the supervision of the USSR Register of Shipping for a class KM III research icebreaker. It is a two-decked electrically driven motorship with a long forecastle. The icebreaker's hull is divided by water-tight bulkheads into eight compartments. The icebreaker's stability satisfies the requirements of the USSR Register of Shipping for vessels with an unlimited area of operations. An ice strake extends vertically to the upper deck in accordance with USSR Register of Shipping Regulations. In order to reduce roll, the icebreaker has a passive anti-rolling tank (Frahm tank).

In order to conduct scientific research operations, a laboratory complex has been built. This makes it possible to carry out work in the following basic scientific directions: oceanography, meteorology and ice research. The oceanographic complex includes six laboratories and six special winches. A divers' compartment with the appropriate equipment is envisaged for physical exploration with the aid of underwater observation. There is a special 800-mm hydrologic through-shaft through which hydrologic instruments can be released during ice navigation and through which divers can exit under the ice. The working area around the oceanographic winches can be blasted with warm air (at a temperature of 30-35°C) in the winter-time. This improves the working conditions for the hydrologists and prevents the cable from freezing on the winch drum during severe cold.

The meteorological complex includes two laboratories and an open meteorological station. In addition, a telescopic mount has been developed in order to make actinometric measurements. This makes it possible to extend the apparatus 8 m ahead of the stempost.

The ice-research complex consists of two laboratories, in one of which the temperature can be maintained as low as -18°C . This makes it possible to conduct work with natural ice samples at temperatures which are normal for them.

In order to store and process information, provisions have been made for a special laboratory. There also is a photo laboratory and a conference room.

Vessel Basic Specifications

Length:	
Length (greatest)	73.0 m
Length between perpendiculars	62.0 m
Beam (greatest)	18.6 m
Hull height	8.3 m
Draft:	
Light draft	5.3 m
Cargo draft to summer mark	6.6 m
Displacement:	
Light draft	2528 t
Cargo draft to summer mark	3650 t
Dead weight	1212 t
Gross tonnage	2828 reg t
Speed	14 kt

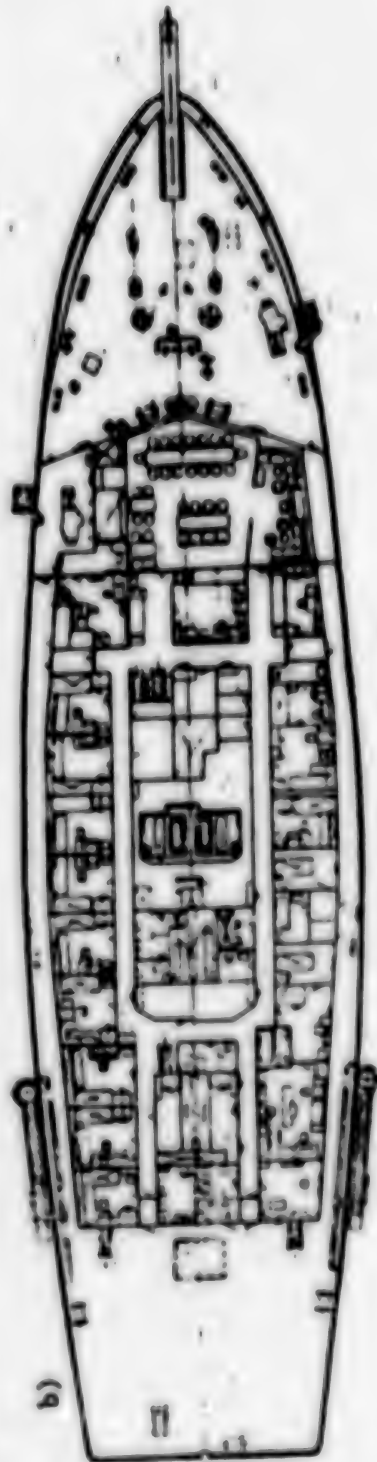
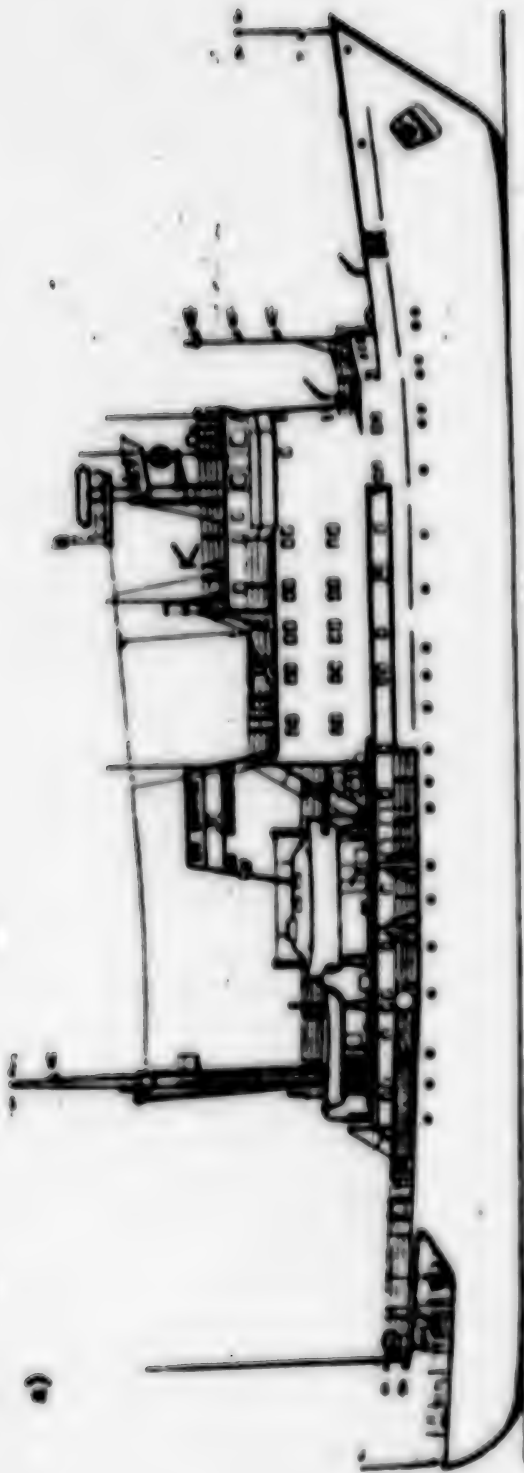
In addition to the rooms already mentioned, provisions have been made for a spare laboratory, a lab-equipment workshop, special storage rooms and a cargo hold with a volume of 150 m^3 .

The drive power plant consists of the following major parts: three type 13D-100 main diesels with outputs of 1.3 MW and a frequency of rotation of 2.4 and 3.2 s^{-1} ; three type AN-92-4 exciter sets with AC-motor drive; a triple-wound generator exciter and a double-wound electric-motor exciter, each with outputs of 15.4 kW.

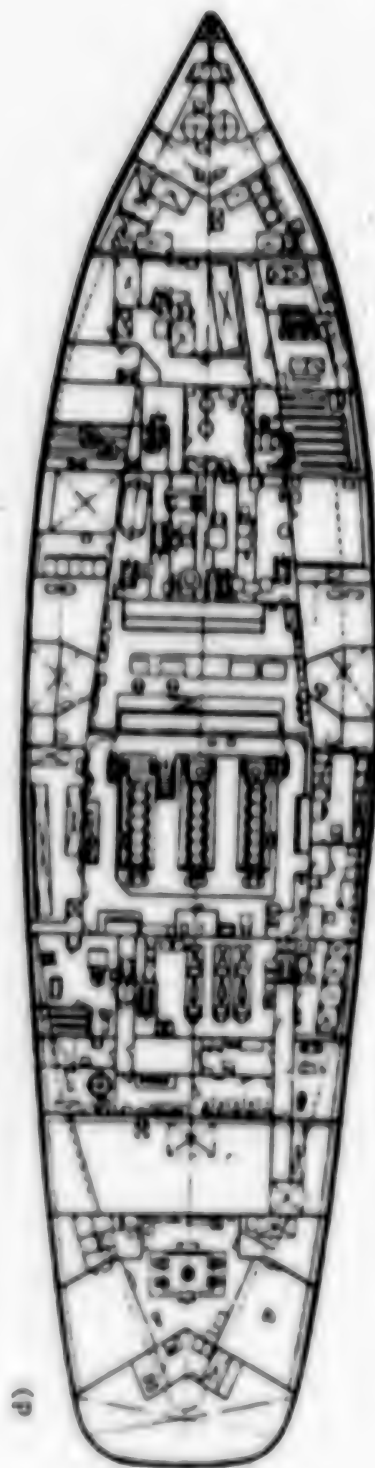
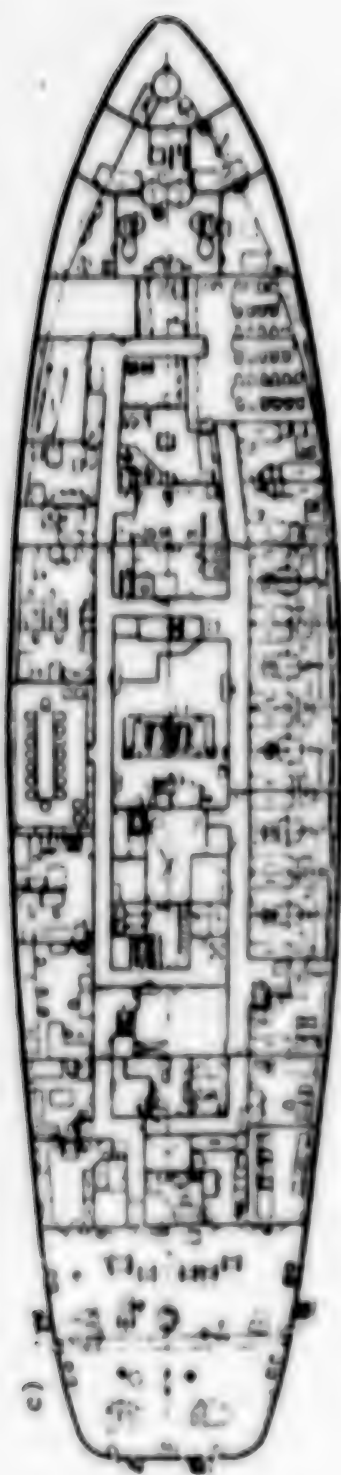
Control over the electric motor can be accomplished from the conning bridge or else from a central control post. The transfer from one control station to the other is carried out with the aid of switches located on the electric-propulsion panel at the central control post.

The ship's electric power plant consists of five DGR 200/500-3 auxiliary diesel generators with type 6 ch 25/34-2 drive motors rated at 0.2 MW at a frequency of rotation of 8 s^{-1} .

The boiler complement consists of two KVVA 2.5/2 boilers with a steam output of 2.5 t/h, which provide steam to all the consumers in the winter period. The boilers operate both on fuel-oil and diesel fuel.



Overall Layout:
 a - Side view; b - Forecastle deck;



Overall Layout:
c - Upper deck; d - Lower deck.

The machinery plant is located in the hold in four unconnected water-tight compartments. The five auxiliary diesel generators are in two of these compartments, while the other two hold the main diesel generators and the electric drive motors. The auxiliary boiler plant is co-located with the distillery plant in a separate compartment on the upper deck.

In a special compartment on the deck in the superstructure, a type DGFA 100/1500P diesel generator with an output of 100 kW is installed. The drive motor is a type 1DGBG (6 ch 15/18) diesel. Start-up of the emergency diesel generator is accomplished with an electric starter or by means of compressed air.

The control station for the electric propulsion installation and a control station for the main and auxiliary diesel generators are co-located in the central control post, located on the lower deck. Here are also the remote-control and alarm and warning-signal systems for specific operating parameters of the propulsion plant, the auxiliary boiler plant and the low-pressure compressed-air system.

Three-phase 380 V/50 Hz alternating current is used as the main power supply for the consumers of the icebreaker's electric power plant. Type ATO-400 and VAKS transformers are installed to provide the 222 V alternating current used for powering the lighting system, the refrigeration in the food compartment, the radio-communication and radionavigation systems and a portion of the everyday electrical requirement. The power supply for the oceanographic winches, which operate on direct current, is accomplished through an AC/DC transformer.

Two four-bladed screws with detachable blades are installed on the icebreaker for propulsion. The diameter of the screws is 3.5 m. An ordinary hollow rudder of simplified section is installed on the vessel. It is brought into play by an R16 electrohydraulic steering engine. The control system for the steering engine is of the "Aist" type.

The icebreaker is equipped with two Hall-type bower anchors of 2250 kg each. There are also drag anchors--two of 100 kg and two of 150 kg. Dropping and hoisting the anchors is accomplished with two anchor and warping capstans--one ShE 16M-2 and one ShE 16M-3.

Two 3SShR2-M 55-man motorized lifeboats and five type PSN-10M pontoon lifeboats are part of the rescue equipment. There is also one YaLP-6 rowboat.

The operation of the drainage system is insured by an ENP 25/2.5 electric piston pump with a delivery of 25 m³/h. Flushing of the bilgeways is accomplished by running bilge-water into a tank from which a twin-screw 2VV 1.6/16-1.6/4B electric pump with a delivery rate of 1.6 m³/h transfers the water into a separator for purification. The purified water is purged over the side, while the separated petroleum products are poured off into an oil-residue collector tank. A type SK-2.5 coalescing bilge-water separator is installed on the icebreaker. This separator limits the petroleum-product content at the output to not more than 100 mg/l. One of the diesel fuel tanks is set aside as an auxiliary tank for collecting the bilge-water and drainage water when the vessel passes through particular areas where any kind of purging is forbidden. The bilge water collected in the tanks can be pumped out through the separator and purged over the side or else it can be passed ashore without the use of the separator.

In order to remove a great mass of water from the icebreaker's main compartments, provisions have been made for a bilge-pumping system served by two NTsV 630/15A-P pumps from the trim system, possessing a delivery rate of 630 m³/h. In addition to the main bilge-pumping equipment, there is a VPEN-100 portable immersible electric pump with a delivery rate of 100 m³/h.

In order to improve the icebreaker's ability to pass through heavy ice as well as to free it when it becomes wedged, there is a trim system consisting of bow and stern trim tanks, pipes, fittings and trim pumps. These provide for a change in trim at the bow or stern of 1 meter per 12 minutes. Provisions have been made for controlling locally or from the central control post the pipes and fittings that effect the operation of the pumps when filling and draining the trim tanks.

For controlling fires there is a water system served by two NTsV 100/80A (delivery of 100 m³/h) pumps and one NTsV 80/80M (delivery of 40 m³/h) pump. The pumps are controlled at the unit itself or from the central control post. The firemain is kept constantly under pressure by an outside-water main served by NTsV 25/65 pumps with a delivery of 25 m³/h. Control over the pressure in the firemain is accomplished from the central control post.

A chemical fire-smothering system is served by two stations located in various portions of the icebreaker. The fire-extinguishing fluid can be delivered into any compartment of the engine rooms. The reserve of fluid stored at each station guarantees one-shot suppression of fire in any of the compartments protected.

The air-foam fire-extinguishing system for controlling fires that originate locally in the machine and boiler rooms consists of seven stationary high-expansion (1:100) type SO foam units and two SO-IV units with a discharge of 13,600 liters each and five SO-III units with a discharge of 4,500 liters each.

A steam-smothering system is intended to extinguish fires in the fuel tanks, the cofferdams, the paint locker, in the diesel mufflers and under the boilers. In addition to these systems, the icebreaker is equipped with auxiliary fire-fighting apparatus and equipment in accordance with USSR Register of Shipping Regulations.

The taking-on of outside water by cooling, sanitary, fire and trim pumps is accomplished through their own kingston valves. These valves are installed in the cross-flow connecting the bow and stern ice boxes, whose intake grates are located in the side portion of the vessel below the shoulder. These intake grates provide for taking on the necessary amount of water for all users from one box in the absence of slush-ice clogging. Provisions have been made for heating the discharge water and for delivering it from the units to the upper portion of the ice box when sailing in ice.

It is possible to blow-out the ship's ice box with compressed air. When the icebreaker is sailing in water with a temperature above zero, the discharge of water from all apparatus and cooling equipment can be carried out through a common pipeline into either of the ice boxes, using one for intake and the other for discharge. When passing through shallow water or when the ice boxes are clogged with ice, the partial intake of outside cooling water is possible from the bow and stern trim tanks. In this case, the discharge of outside water is carried out into these same tanks.

In order to create in the vessel's compartments microclimatic conditions which are favorable for the crew's work and rest, provisions have been made for an overall ship's ventilation and winter conditioned-air system. In order to combat local icing, provisions have been made for the delivery of hot outside water to the icebreaker's open decks from two mixers installed in the vessels bow and stern sections. All sea openings located above the waterline have local heating.

There are two automatic refrigeration plants onboard the icebreaker: one for the food lockers, consisting of four compressor-condenser units, type MAK 4/I, and one for the ice-research laboratory, consisting of two (one in reserve) type MAK 4/II compressor-condenser units. There is, in addition, a hot-water supply system. For this purpose, an automated steam hot-water heater tank is installed. It has a rate of water discharge of up to 3 t/h at a temperature of approximately 70°C. A single open-type waste and sewage system with two holding tanks has been built for the removal of waste and sewage water. The tanks are served by an ESN-14/P electric pump and a VEZh-25F ejector. Provisions have been made for draining the tank directly overboard as well as into tanks in port.

The icebreaker is equipped with the "Tranzit" satellite navigation system, receiver indicators from the "Omega", "DEKKA" and "Pirs-1M" radionavigation systems, NEL-3 and NEL-10 echo sounders, "Brig" and "Musson" radio transmitters, the RTA-7B radio-teletype and other communications and radionavigation devices.

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MISCELLANEOUS

DISCUSSION OF SIGNIFICANCE OF TRANSPORTATION STATISTICS

Moscow EKONOMICHESKAYA GAZETA in Russian No 48, Nov 80 p 10

[Article by M. Minakov, sector chief of the Institute of Complex Transportation Problems of the USSR Gosplan, candidate for the degree of doctor of economic sciences: "Transport: Proportions of Development"]

[Text] The development of transportation, which fills the growing needs of the national economy for conveying cargo and passengers, has become very important in recent years, when we have been observing a lack of balance in the plan for the shipping of cargo. To establish the required balance one must have data which adequately characterize the production capabilities of transportation and the needs of the sectors of the national economy for its services. Determining these needs is one of the most complex problems in planning work, the solution of which must be viewed in connection with the preparation of a long-term, comprehensive program for the development of transportation. This program, commented L.I. Brezhnev at the November (1979) Plenum of the CPSU Central Committee, must encompass questions having to do with the development and joining together of all forms of transportation. He emphasized that special attention must be devoted to radically improving the organization of shipments and to the more rational planning of shipments. At present in accordance with the decree of the CPSU Central Committee and the USSR Council of Ministers of 12 July 1979, proposals are being drafted to strengthen the influence of the economic mechanism upon the final results of the work of transport.

Determining the Needs

The selection of indicators which reflect the requirement of the national economy for the conveying of cargo is important in both a theoretical and practical sense. Practical experience indicates at first glance that this matter is fully satisfactory. In long-term and annual planning the freight turnover is determined by type of transportation in ton-kilometers and the amount of cargo shipped is expressed in tons. The first indicator is directive in nature, while the second is an estimated indicator. Freight turnover indicators are rightly criticized because they are not oriented toward final results and reflect a recurring account.

The total amount of cargo shipments by type of transport, however, does not reflect the actual requirement of the national economy for shipments because it includes recurring shipments, which occur when transferring cargo from one mode to another. In addition, and this is no less important, the structure of the cargoes being conveyed varies so much that they cannot be lumped together as an estimate of the total.

It is no accident that statistics avoids this kind of arithmetic synthesis of tons of varying shipments, in planning of proportions priority is given to freight turnover. This, of course, in an important indicator of transport work; it cannot be overlooked when determining the capabilities of transportation, estimating its requirements for labor, material and financial resources, and their distribution among the types of transport. But although the freight turnover indicator is used to forecast and plan the volume of shipments, by content it cannot express the actual needs of the national economy for the shipping of cargo.

An acceptable solution to the task of determining these requirements is possible, in our opinion, if the amount of cargo to be shipped in tons and the freight turnover are established not only by mode of transport but also by its functional systems, i.e., separately by internal domestic shipments, shipments within the domestic trade sphere and external shipments by sea. The apportionment of these systems when planning the development of transportation will make it possible to more soundly distribute material, labor and financial resources among them and other sectors of the national economy. Such an approach is particularly needed now, when, as Brezhnev noted in his speech at a solemn meeting in Alma-Ata, the modernization of transportation and other basic sectors of the national economy must become the core for the further economic and social development of the Soviet Union.

The Functional Systems

The conveyance of goods is the primary activity of the transportation sector. Within the internal sphere of commodity circulation the railroads, river transport, merchant marine, petroleum pipeline, gas pipeline and automotive transport function separately and together.

The "penetration" of transport into the very sphere of material production is characteristic of the development of transportation. Internal technological shipments are being performed to an ever greater degree by common use transport, especially automotive transport. According to approximate estimates, of the cargo carried by common use automotive transport in 1979 more than six billion tons of cargo for internal shipment accounted for 40 to 45 percent.

However, technological shipments still are not considered separately neither on the whole or by sector. The organization of their accounting and planning would result in the solution of such matters as the centralization of industrial transport. They see a stumbling block

in the seemingly inadequate definition of the criteria for dividing shipments into commodity cargoes and technological cargoes, even though such a criteria exists. The decisive mark of technological shipments is their restriction within a single enterprise, when the cargo being conveyed is not a commodity.

Freight turnover and amounts of external shipments in tons as well as currency receipts are planned for sea transport.

The needs of the national economy for shipments within the domestic market and for technological shipments are not determined. To correctly solve this task, it is necessary to include both the shipments themselves and the production of product in accounting and planning. As an indicator of the needs of the national economy for shipping, one can recommend the primary (client) shipping in tons, which characterizes the receipt of cargo for a specific product list for common use transport from the production enterprises, bases and also import cargoes (without recurring accounting from shipping transfers). The internal technological shipments are determined as the inter-plant turnover of product and they must be equal; commodity shipments correspond with the amount of commodity or saleable product.

The establishing of sound proportions in commodity shipments and the national economy's needs for them are hindered by the fact that commodity product is planned and accounted for in fiscal terms rather than in natural terms. As a result the exchange sphere cannot be clearly outlined and final natural product is not singled out. This complicates control over its movement from the place of production to the consumption points. For this reason product should be planned and accounted for in natural terms both for total amount and for the commodity portion.

It is necessary to use a unified product list of the cargoes being shipped, which has been coordinated with the product list being used in production planning and supply operations, for all modes of transportation in statistical accounting and planning. Such a unified product list will make it possible to better plan and account for the shipping needs for the unified transportation system.

Consideration of the transportation factor in siting production facilities is very important in determining optimal proportions. In practice the optimal system of transport-economic ties between suppliers and consumers of raw materials, fuel and finished product when developing diagrams for the development and siting of production facilities and the technical-economic justifications for the construction of enterprises is usually justified. As a criterion for optimizing the siting of a facility they use the minimum of total expenditures connected with the production and shipping of products.

As the analysis of the planning materials shows, the transportation factor is rather carefully considered when optimizing the fuel and energy balance, selecting sources of raw materials and fuel for metallurgical enterprises, siting timber, wood-working and cellulose and

paper industrial enterprises and cement enterprises. At the same time this matter is handled most unsatisfactorily when establishing the specialization and rational loading of the capacities of oil refineries, rolling mills and enterprises for the production of reinforced concrete structures. Frequently transportation expenditures are totally overlooked for such organizations, which leads to cross shipping and excessively long distance shipping of product.

The Formation of Balances

The balanced development of transportation and other sectors of the national economy are inextricably linked with maintaining inter-transport balance, upon which rests the economically feasible distribution of shipments between the various modes of transportation. The criteria for optimizing this distribution is the minimum total incurred expenditures for shipping cargo both on the whole and for specific modes of transport. This requires that consideration be given to the spheres of the advantageous use of different modes of transport, particularly the high efficiency of using pipelines for transporting oil rather than shipping it by railroad and the advantage of transferring short haul shipments from the railroads to automotive transport.

Changes in the structure of freight turnover to a large extent reflect this progressive tendency for raising the percentage of specialized modes of transport - oil and gas pipelines while reducing the percentage of railroads, although the latter continue to play an important role in shipping of cargoes within the sphere of material circulation (in percentage of the total):

Transportation mode	1960	1965	1970	1975	1980
Railroad	79.4	69.0	63.1	59.2	50.4
River	5.2	4.7	4.4	4.0	3.7
Sea	6.9	13.8	16.6	13.4	12.5
Oil pipeline	2.7	5.2	7.1	12.1	18.0
Gas pipeline	.6	2.2	3.2	5.1	9.1
Automotive	5.2	5.1	5.6	6.2	6.3
	100.0	100.0	100.0	100.0	100.0

The correct distribution of shipments assumes also the optimal development of carrying and throughput capacities of individual modes of transportation taking into consideration the use of progressive means of traction, a specialized park of railroad cars, containers and packaging materials. To do this it is necessary to systematically determine for the longterm and mid-term future the cargo traffic on specific yards, lines and sectors of the railways. The methods for solving these tasks have basically been developed.

A great deal of practical experience in compiling schematics for the comprehensive development of all modes of mainline transportation has been accumulated in the scientific-research institutes; but there are still difficulties and unresolved problems. One of the basic problems is the lack of territorial balances of production, distribution and consumption of cargo-forming kinds of product, on the basis of which one can only determine the optimal transport connections and freight flows. This forces the institutes themselves to make approximate balance estimates by economic regions, which, of course, reduces their soundness.

In the decree of the CPSU Central Committee and the USSR Council of Ministers "Concerning the improvement of planning and strengthening the influence of the economic mechanism upon raising the efficiency of production and the quality of work", the USSR Gosplan and the USSR State Committee for Material and Technical Supply with the participation of the USSR ministries and departments and the councils of ministers of the union republics have been given the task of compiling territorial balances for the production and distribution of the more important kinds of product. In accordance with these balances the transport ministries and departments must determine schematics of optimal freight flows for large cargoes. Such balances are also needed to site production forces and to improve the territorial organization of the economy.

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